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ABSTRACT

A research project studied the accomplishments of 399 of the 3,780 1982 and 1984 graduates from 6 senior vocational agriculture programs and 500 of the 2,661 1984 graduates from 2 technical agriculture institutes in Taiwan. Information was also provided from the graduates' schools and about older graduates from a 1975 study. Data were gathered through mailed surveys. The project sought information about the educational and occupational attainments, opinions of the graduates about their schooling, and more specific information from those who were engaged in farming. Some of the results of the study were the following: (1) about 40 percent of the vocational agriculture program graduates were employed in agricultural occupations; (2) younger graduates of either type of program were much more likely than older graduates to be employed in private enterprises, whereas older graduates tended to work for the government; (3) four times as many older graduates in vocational agriculture were in nonfarming positions than were younger graduates; (4) about two-thirds of the respondents indicated that the vocational agriculture program was not helpful in getting their first job; (5) more than 20 percent of the 1984 graduates of technical agriculture institutes attended another college or university after graduation; (6) about one-third of the older graduates and 46 percent of the recent graduates of the vocational programs were engaged in farming; and (7) very few of the technical institute graduates were farmers. Recommendations were made for improvement in all areas of agricultural education. (Three appendixes contain tables of data from the research and the survey forms. The document is written in English and Chinese.) (KC)

ED337619

台灣之農業與農業教育
農業職業及專科學校畢業生之研究

國立中興大學・密西根州立大學
農業委員會補助計劃
National Chung Hsing University
and
Michigan State University
Project Funded By:
The Council of Agriculture

AGRICULTURAL EDUCATION AND FARMING IN TAIWAN

A Study of Graduates From Vocational and Technical Agriculture Programs

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AGRICULTURAL EDUCATION AND FARMING IN TAIWAN: A STUDY OF THE GRADUATES FROM VOCATIONAL AND TECHNICAL AGRICULTURE PROGRAMS

Based on

A Project Leading to the Recruitment of Young Farmers
Engaged in Joint, Entrusted, and Cooperative Farming:
Evaluation of Occupational and Educational Attainments
of Graduates from Vocational and Technical
Agriculture Programs*

*A Research Project Supported by
Farmers Service Department, Council of Agriculture,
Executive Yuan, Taipei, China
行政院農業委員會補助

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April 1990

FOREWORD

The role of agricultural education in the development of nations has often been raised as a question. Sometimes the questionner refers to agricultural education in primary schools, other times the reference may be to agricultural education at the middle school (junior and senior) level as well as at the technical and university levels. Occasionally, especially among many of the writers from the United States, a rather narrow point of view is taken and the reference to agricultural education is asumed to mean vocational agriculture at the high school level.

This report is about agriucultural education in Taiwan at the senior middle school and agricultural institute levels. The authors of the report are appreciative of the opportunities which have been theirs to work together on several research projects since 1961. Although much of their focus has been directed toward the vocational agriculture programs, their concerns have been for the ways in which the schools could contribute (a) to the professional growth and development of young people interested in agricultural careers; and (b) to the strengthening of the agricultural system including production, distribution, processing, policy development, and education.

Starting in the mid 40's, at the time of the restoration of Taiwan to the Republic of China, the educational system was rebuilt, utilizing the facilities and many traditions left by the Japanese as well as involving the large number of educated personnel who moved from the mainland to Taiwan. Today, 1990, there is an impressive array of schools at all levels, with highly qualified teachers, many modern laboratories, and serving nearly 25 percent of the 20 million population in various forms and levels of education.

Agricultural education has been a part of the educational system in Taiwan for many years. During the fifty-year period of occupation by the Japanese, they started many agricultural schools at the junior middle school level. Some of those same schools are now at the senior middle school level or higher, and still functioning today as part of the agricultural education programs.

Agricultural education in Taiwan has continued to change, to adapt to the changes in the social, economic and political conditions. In the middle and late 40's, as well as the early 50's, Agricultural education, in terms of the largest numbers of students enrolled, was primarily at the junior middle school level. In the late 50's there were vocational agriculture programs at both the junior and senior middle school levels, techincal institute level, and two institutions offering baccalaureate degrees in agriculture.

As the country has developed economically and socially, major changes have been

made in the agricultural education programs. The junior middle school vocational agriculture progams were phased out in the late 60's, and the number of senior middle schools offering vocational agriculture were increased. The curricula have undergone many changes, always with an emphasis on adaptation to the needs of society for persons with agricultural, social and professional skills and competencies.

As agriculture has changed, so has the technical content emphasis in the schools changed. Now, as the schools are entering the last decade of the twentieth century, there is again a concern for adaptation of the curriculum and the role of the schools so as to best serve the students, the communities and the nation.

It is with a concern for keeping the agricultural education programs in Taiwan strong at all levels, that the authors have attempted through this modest research project, attempted to call attention to some of the characteristics of the presentday programs, the graduates and to make some recommendations for the future.

Appreciation is extended to the many key persons at the schools which assisted in the implementation of the research and the contacts with their graduates. The many graduates who responded have our thanks. Some of those graduates, in this research, were responding for the fourth time to our questionnaires. They especially receive our thanks for their help over the past nearly 30 years.

The administrators at National Chung Hsing Univesity and Michigan State University have provided excellent support for this project. We give them our thanks and express our appreciation. And to the Council of Agriculture, especially Mr. S. T. Lin, Deputy Director of the Farmers Service Department, we are grateful for the material and moral support for the project. To all of the above, and many unnamed others, we say THANKS!

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序　言

農業教育在國家發展中所扮演之角色常成爲議論之課題，論者有將農業教育認應啓萌於初級學校，亦有認應植基於中等學校或高等院校階段，但多數美國學者咸認農業教育應是在高中階段之農業職業教育。

本研究報告所論乃指台灣之專科及高中階段之農業教育，著者深幸自民國五十年起能就此課題從事多次之研究計畫，其目標着重於農職教育之領域，期使學校能(a)培養青年專業精神，從事農業之興趣，及(b)加强農業體系中包括生產、分配、加工、政策之釐訂及教育等。

民國三十年代中期，台灣回歸中華民國，由於接收日據時期所存留之各種教學設施，以及大量由大陸來台之菁英人士，教育重建工作乃能展開，八十年代之今日，台灣數量龐大之各級學校無不具有優秀之師資，充實之設備，二千萬住民中約有百分之二十五接受各級各各類之教育。

農業教育屬教育體系中之一環，在台灣已行之多年，日據時代曾設有多數初級農校，其中若干現已改制爲高級或更高層次之農校，屬農教體系中之一環。

台灣之農業教育迄今仍在變遷中以適應改變中之社會、經濟及政治之情勢。民國三十年代中期以迄四十年代初期，就學於當時仍多爲初級農校之學生數居於首位，迨至四十年代末期農業教育體系包括初級及高級農校，農業專科學校以及兩所授予學位之農學院。

當社會、經濟更趨進步，農業教育乃再度調整其體系，民國五十年代末，取消初級農校，提供職業訓練之高級農校數量增加，所設科別亦隨社會之需要，專業技術及能力本位而適時調整。

農業如有所改變，學校中專業性教學自必隨之改變，當步入二十世紀最後十年之際，各級學校自宜檢討其課程，定位其角色以期對學生、社會及國家發揮其最大之功能。

期盼台灣各級農業教育繼續發展，著者謹以謙沖之心懷展現此一研究報告，論列當前農教體系中之某些特質，畢業生之情況以及就未來之發展提供若干建議。

對協助完成此項報告及訪問畢業生之各學校負責人士深致謝意，對問卷作覆之畢業生即時覆謝，其中竟有若干畢業生曾接受四次問卷調查者，對其過去近三十年中多次協助，另專函致謝。

中興大學及密西根大學校政當局對本研究計畫均作充分之支持，行政院農業委員會及該會林技監世同亦有實質及精神上之支持，對以上諸君子以及協助本計畫推行之多位未列名人士謹致深摯之謝意。

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AGRICULTURAL EDUCATION AND FARMING IN TAIWAN: A STUDY OF THE GRADUATES FROM VOCATIONAL AND TECHNICAL AGRICULTURE PROGRAMS

台灣之農業教育與農事經營
農業職業與專科學校畢業生之研究

Chapter I
第一章

INTRODUCTION
緒　論

"The strengths of Taiwan's(agricultural tehcnology) system are numerous...including good financial support; government policies sensitive to farmer's profit-making motives; a strong central government planning body for agriculture...; heavy emphasis on human capital developmnet; superior islandwide research facilities and scientific personnel; government links with and use of universities and colleges and their faculties of agriculture; abundant and heavily used inputs...; explicit, cultivated linkage between research and extension...; local participation through farmers' associations; and effectively monitored flow of new technology from inception to farmer use; and well educated farmers as well as citizens in general."[1] (page 5)

(Refers to endnotes)

"台灣農業科技所展現之強勢源自多方面，包括充裕之財務支援，政府之政策能配合農民之利益，強有力之中央農業決策單位…；重視人力之開發，遍佈全島之優秀研究人員與充實之設備；大專院校農業科技人才與設備之配合；大量非充分利用對農業之投資…；研究與推廣工作之密切連繫…；透過農會之地方性活動，指導農民使用新技術之有效途徑以及包括農民在內一般人民教育水準之普遍提高[1]"

（參閱附註）

Schools have long been seen as a means of achieving societal goals. The schools have been used as a means of transmitting the heritage of the past as well as a means of preparing the youth for entrance into the present-day society.

Teachers and schooling have a high status in the Chinese society as evidenced by the values placed on schooling by parents and students. Perhaps that high value is due in part to the historical significance of passing examinations as the primary means for advancement in civil service positions, a tradition coming from the teachings of Confucius.

接受教育歷來即視爲達成社會目的之手段，亦視爲青年進入現代社會之途徑。由於家長及學生對求學之重視，教師及教育事業在我國社會中居於崇高之地位，此或由學優則仕之儒家思想有以致之。

However, as societies modernize and economies develop it is quite common to find that at some stages of development, the youth who have achieved higher levels of schooling become disenchanted and disillusioned by failure to achieve the kind of occupational placements to which they have aspired. And the matching of school graduates with occupations often does not meet the expectations of government planners.

但當社會日趨現代化及經濟持續發展達到某種程度，常見之現象爲接受較高教育之青年不能實現其嚮往之就業意願而自幻想中醒悟，來自學校之畢業生與其就業間之銜合程度常與政策制定者之意願不相謀。

This is a report on a research project in which the afterschooling accomplishments by 1982 and 1984 graduates from the senior vocational agriulture programs and the 1984 graduates from the technical agriculture institutes in Taiwan, Republic of China were studied. The study sought information about the educational and occupational attainments, opinions of the graduates about their schooling, and more specific information from those who were engaged in farming.

The target population was graduates from six senior vocational agriculture schools and two technical institutes of agriculture; additional data came from the schools; and finally, some data were collected from previous graduates from approximately 23 schools and two institutes of agriculture.

本報告爲以民國71年及73年度高農畢業生及73年農專畢業生就業情況爲研究對象，蒐集在學及就業等方面之資料，畢業生對在校學習之意見，對經營農事者要求其提出更爲詳盡之說明。

群體之對象爲來自六所農校及兩所農專之畢業生，學校官方之資料，此

外，尚有約23所農校及兩農專早期畢業生已獲取之資料。

Objectives
目　的

Two research questions provided the focus for the research activities:

> Are the present curricula, programs and facilities appropriate for preparing the needed agricultural manpower at the vocational and technical levels?
>
> Are the resources currently allocated to the agricultural education institutions (vocational and technical) adequate?

首先臚陳問題兩則作爲本研之指標：

> 現有之科別、教學計畫及設備能否滿足高農及農專所造就之農業人力之需要？
>
> 當前配置於中專級農業教育體系(高農及農專)之各項資源是否允當？

The objectives for the project were stated as follows:

1. To describe the present-day curricula and programs provided by the Taiwan senior vocational agriculture schools (including the senior middle schools and comprehensive vocational schools with vocational agriculture curricula, commonly known as VA&I schools);

2. To describe the present-day curricula and programs provided by the two national institutes of agriculture located at Chiayi and Pingtung;

3. To determine the educational and occupational atttainments of the graduates from the vocational and technical agriculture programs; and

4. To measure selected attitudes and achievements of a sample of vocational agriculture graduates who are currently involved in farming, some of whom are participants in a Young Farmer Project.[1]

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[1] The data and findings related to this objective are reported separately in a dissertation authored by Ali El-Mutawakel, a PhD candidate in the Department of Agricultural and Extension Education at Michigan State University, East Lansing, Michigan.

資料源自本計畫內一項目，由密大農業教育及推廣系博士班研究生所撰論文之相關部分。

The study was designed to provide an opportunity to compare the extent to which graduates from the various curricula were entering and progressing in production agriculture roles. Particular interest was placed on the graduates from the Farm Management Curricula because of its special purpose of preparing youth for entrance and advancement in farming.

本研究計畫之目的爲：

1. 瞭解現階段高級農業職業學校（包括設有農科之綜合高中及農工職業學校）所設科別及教學設施。

2. 瞭解現階段屏東及嘉義兩所農業專科學校所設科別及教學設施。

3. 衡量農業職校及農業專科學校畢業生在就學與就業兩方面之成就。

4. 衡量現今經營農事之農校畢業生之觀感與成就。

本研究旨在比較各科畢業生在從事農業之就業領域中所能發揮之極致，尤其着重於農場經營科，因該科原爲青年準備從事農業而設者也。

Methodology
方　法

The Process
過　程

Data were collected through the use of questionnaires mailed to sample graduates and from the selected schools through the use of special forms for reporting. The field work was conducted during the period February-June, 1989. The project was supported by a research grant to National Chung Hsing University, Taichung from the Council of Agriculture, Taipei.

Two workshops were held to provide training for representatives from 24 schools and two technical institutes. (See Appendices for a complete listing of the schools, institutes, and persons responsible at each site for collection of data.) The objectives of the research and research procedures were explained, and each school representative was provided with the appropriate materials for her/his use.

經過設計之問卷，以郵寄方式寄達選樣之畢業生及指定之農校以蒐集資料，并在民國七十八年二月至六月間從事學校訪問，所有各項計畫工作係由行政院農業委員會資助，國立中興大學執行。

調查之前，邀請24所農校及兩所農專有關人員，舉行兩次研討會，向與會人士說明本次研究之目的，以及選樣、郵寄方式，并分別取得問卷、表格、函件等(見附錄與會學校及參加人員名單)。

The Population and Sample
群體與樣本

The respondents consisted of graduates from vocational and technical agriculture programs for selected years. There were two sub-groups of respondents: new respondents and respondents who had responded in a previous research project in 1975. The new respondents consisted of samples of graduates from the 1982 and 1984 graduates from six vocational agriculture schools; and a sample of 1984 graduates from the two technical agriculture institutes.

回函者包括農校及農專經選定年度之畢業生，分爲兩組：一爲初次回函者，另一爲曾接受民國64年從事之研究調查者，初次回函者含有民國71年及73年六所農校選樣之畢業生以及73年兩所農專之選樣畢業生。

Vocational Agriculture Graduates

The sample of vocational agriculture 1982 and 1984 graduates was taken from four out of nine curricula from six out of 24 schools. The six schools were selected because they were the only schools which offered only the agricultural curricula (and the Rural Home Economics Curriculum). The other schools were either agricultural and industrial vocational schools or were academic high schools.

The sample consisted of 399 graduates out of a total population of 3780 graduates from the six schools as shown in Table 1. The four curricula (Farm Management, Animal Husbandry, Agricultural Machinery, and Horticulture) were selected because of their relationship to production agriculture.

農校畢業生

民國71年及73年農校畢業生之樣本選自24所學校中之六所，九種科別中之四種，所選定之六所學校均爲祇設有農業科別者(含農村家政科)，農工職業學校及高級中學不包括在內。

六所農校3780名畢業生中選出399名作爲樣本，如表1.四種科別(農場經營、畜牧、農業機械及園藝)乃因其關係農業生產之故。

Table 1. Population, Sampling Fraction, Sample, and Curricula for 1982 and 1984 Vocational Agriculture Graduates.

表一. 民國71及73年農校畢業生群體及分科樣本數

Curricula 科別	Number Graduates 畢業生人數				Population 群體數		Sample 樣本數	
	1982 71年		1984 73年					
	24 Schools	Six Schools	24 Schools	Six Schools	24 Schools	Six Schools	Fraction	Number
All Curricula(總數)	4496	1740	5290	2040	9786	3780		
Four Curr.四科								
(Farm Mgmt)(農場)	565	197	621	214	1177	411	1/4th	105
(Ani. Husb.)(畜牧)	691	223	807	269	1498	492	1/6th	99
(Agr. Mach.)(農機)	856	294	1025	307	1881	601	1/5th	100
(Horticulture)(園藝)	271	169	333	203	604	372	1/4th	95
(Sub-Total)*小計	2383	883	2777	993	5160	1876		399

Note: The samples were drawn using a random starting number on the official lists of graduates at each of the six schools. A reserve sample of 10% was drawn to use as replacements for address unknown, died, or living abroad.

*Sub-total for the four curricula. 小計示四種科別

註：樣本之選取，採隨機取樣法，以六所農校檔案資料爲準，并加圈10%作備用樣本。

Technical Agriculture Graduates

The technical agriculture graduates consisted of two groups; the respondents in 1975 and the newer graduates from the class of 1984. The 1975 respondents were a sample from the graduating classes in 1964 and 1970. In both groups there were graduates from 3-year and 5-year programs. The 3-year programs were those who had entered one of the institutes after completion of the senior academic or vocational school. The 5-year graduates were those who had entered one of the institutes after completion of the junior middle school programs. The sample for the 1989 study included more than 500 graduates about equally divided between 3-year and 5-year graduates, as shown in Table 2.

農專畢業生

農專畢業生包括兩部分：曾於民國64年回覆問卷者及新近於73年畢業者，64年回覆問卷者爲民國53年及59年之畢業生，包括三年制及五年制，三年制學生來自高中畢業生，五年制學生來自國中畢業生，民國78年之研究樣本有500餘名畢業生，三年制及五年制者各占約半數，如表2.

Table 2. Populations, Samples, Net Samples and Respondents for 1989 Study of Taiwan Technical Agriculture Graduates.

表二. 民國78年研究台灣農專畢業生群體、樣本、淨樣本及回函數

Year of Graduation 畢業年度	Kind of Program 制別	Previous Research 前期研究 Original Population 原群體數	First Year Incl. 初用年	lst Sample Number 初用樣本數	1989 Study 78年研究 Sample* 樣本數	Net Sample** 淨樣本數	Responses 回函 Number 人數	Percent 百分率
1964	3-Year	174	1975	87	86	48	7	14.58
(53)								
1970	3-Year	344	1975	58	52	37	10	27.03
(59)	5-Year	349	1975	88	85	61	16	26.23
1984	3-Year	793	1989	125	125	124	40	32.26
(73)	5-Year	1001	1989	64	170	166	59	35.54
Sub-Total	3-Year	1311	1989	270	263	209	57	27.27
小計	5-Year	1350	1989	152	255	227	75	33.04
Total總計		2661		422	518	436	132	30.28

*Sample. The respondents to a questionnaire in 1975(1964 and 1970 graduates) were used as the sample in 1989. For the 1984 graduates, a sampling fraction of 1/6 was used with a random starting number on the official graduation lists from each of the two institutes.

民國64年問卷之回函者(53及59年畢業生)用爲78年研究之樣本，73年畢業生以1/6之抽樣比，隨機取樣錄自兩農專之檔案。

**Net Sample = Sample − (Died + Address Unknown). When possible RESEURE SAMPLE respondents were substituted for DIED and ADDRESS UNKNOWN.

淨樣本 = 樣本－(死亡 + 地址不詳)，如可能以備用樣本遞補。

Data were collected during April and May 1989. For this Table the 5-Year 1984 graduates include all of the regular 5-Year plus the Evening and Regular 2-Year graduates (all were Chiayi graduates).

73年4～5月蒐集資料，本表所列，73年5年制、日夜間部及2年制日間部畢業生全部列入(均屬嘉專)。

Data Gathering
資料之蒐集

Information was collected from graduates and from the schools. Basic data about each sample graduate was requested from each of the participating schools. These data included such information as gender, curriculum, occupation of parent at the time the student enrolled in the school, overall graduation average, average in Chinese, and rank in graduation class. In addition, each school was requested to provide

information about the amount of land, current enrollment by year, laboratory facilities and equipment, dormitories and classrooms, special projects, and in-service for teachers.

Four questionnaires were developed for gathering data from the sample graduates from vocational agriculture schools and the two technical agriculture institutes. Many items were the same for each of the four sets of questionnaires. The questionnaires were based primarily on questionnaires previously developed, tested and used in research projects conducted in 1962, 1968 and 1975. Copies of the questionnaires as well as copies of the cover letters and Thankyou/Reminder Cards may be found in the appendices. The target graduates for each of the questionnaires were as follows:

Q-2 V-A Schools graduates who responded in 1975 (Graduates for the years 1950, 1955, 1959, 1964, and 1969)
Q-3 V-A Schools graduates in 1982 and 1984
Q-4 Technical Institute graduates who responded in 1975
Q-5 Tecjmoca; Omstotite gradiates in 1984

研究資料分別自畢業生及學校兩方面蒐集，畢業生之基本數據係自各個學校取得包括性別、科別，就讀時家長職業，畢業總平均分數，國文平均分數，班中畢業名次等，此外亦請學校填報校地面積，當年註册學生數，教學設備，教室及宿舍，重點計畫及教師之在職進修。

以四種問卷寄發各農校及兩所農專之畢業生以蒐集資料，各種問卷所列之項目有甚多相同者，其內容多係前於民國51年、57年及64年從事之研究計畫設計并經測試者。問卷、啓事函及感謝卡之樣張均列於附錄中，每種問卷各針對不同年期，不同制別之畢業生，略如下所示：

Q-2 曾於民國64年回覆問卷之農校畢業生(39年、44年、48年、53年及58年次之畢業生)
Q-3 民國71年及73年次農校畢業生
Q-4 曾於64年回覆問卷之農專畢業生
Q-5 73年次農專畢業生

All questionnaires were mailed from the home schools of the graduates. A sequence of four mailings was used, consisting of the following:

First Mailing: Questionnaire plus cvover letter signed by the Principal of the home school.

Second Mailing: (one week after the lst mailing) A Thank You/Reminder Card to all who were sent the questionnaires.

Third Mailing: (one week later) A second request questionnaire plus a cover letter signed by the Principal of the home school. Sent only to those who had not yet responded.

Fourth Mailing: (one week later) A second Thank You/Reminder Card to all who sent the second request questionnaire.

Visits were made to the schools for the purpose of supervising the collection of data and to provide on-site observations about the nature of the school and its facilities. Visits were made to 14 schools and four schools were visited twice.

Interviews were conducted to gather more specific information from 1982 and 1984 V-A School graduates who were engaged in farming. The interviewing was done by six senior students from the Department of Agricultural Marketing, National Chung Hsing University. They were provided training in the procedures for selection of the graduates (only those engaged in farming, full-time or part-time), the purposes of the interviews, and the interview techniques. Details regarding the interviews, the selection of interviewees, and the findings from the interviews are reported in the Ph.D. dissertation in the Department of Agricultural and Extension Education authored by Ali El-Mutawakel.

所有之問卷均自畢業生之母校寄出，各種函件類別，依下列順序次第寄出：

第一次寄發：問卷及由學校具名之啓事函。
第二次寄發：(第一次發函後一星期)寄發感謝卡與所有寄發問卷者。
第三次寄發：(一星期後)對尚未寄回卷者寄發第二次問卷及啓事函。
第四次寄發：(一星期後)寄發感謝卡與所有寄發第二次問卷者。

研討會後幷走訪各校，協助問卷之寄發事宜幷參觀學校一般設施，共走訪14校，其中四校曾前往兩次。

對71年及73年畢業後從事農業之畢業生爲蒐集較多之資料，曾安排由中興大學農產運銷系四年級學生所擔任之訪問工作，事前幷對畢業生之篩選(專業或兼業經營農事者)，訪問之目的、訪問技巧等預作講習，密西根州立大學農業教育及推廣系研究生穆愛禮之博士論文對本節有較詳細之敘述。

Responses from Mailed Questionnaires
寄發問卷之回函

The response rate by the sample graduates in this study was disappointing to the authors. Previous studies conducted by the authors had resulted in rather high levels of returned, completed questionnaires. In 1962 the response rate was 95.1% from a net sample of 4809; in 1968, the response rate was over 90% from a net sample of 2724; and in 1975 the response rate was 84.6% from a net sample of 1864 V-A graduates and 82.76% from a net sample of 232 technical agriculture graduates.[2] However, the response rate in 1989 was strikingly less than for the previous studies, ranging from about 22% for the 1982 graduates to 50.64% for the 1955 graduates who had responded in 1975. Specific response rates are shown in Tables 2 and 3.

Many of the procedures used in the previous studies were repeated in 1989. The lower response rate was probably due to a combination of many factors, perhaps the four key ones being as follows:

1. Changes in the relationships between graduates and their "mother school." The increased enrollments, large class size, heavy loads of teaching and other duties assumed by teachers, and other school changes may have contributd to a lower level of respect for and/or sense of responsibility to the principal and others at the school.

2. Changes in society. The shift from rural to urban characteristics, the greater individual freedom stemming from economic prosperity by families, improved and expanded communications, the emphasis on consumerism as evidenced by advertising and frequent use of mailed surveys by marketing campaigns, and other similar factors may have caused the graduates to pay less attention to the questionnaire which was mailed from the "mother school."

3. The absence of an agricultural teacher education faculty and program at National Chung Hsing Unviersity or any other university. At the time of the previous studies there was a Department of Agricultural Education at National Chung Hsing University which prepared teachers of vocational agriculture with faculty who maintained a close professional relationship with all of the schools with vocational agriculture programs. Those faculty previously assisted with the supervision of the research at each school through visits and encouragement to the persons responsible.

4. The procedures used for mailing the questionnaires. During the previous studies the questionnaires were mailed with use of the "Prompt Delivery" stamps. That procedure seemed to elicit from the graduate a sense of impor-

tance for the questionnaire. In 1989 the questionnaires were mailed using regular first class postage, as an economy measure.

著者對本次研究樣本畢業生問卷回函之比率深感失望，前此從事之各項研究，回函數均高，51年淨樣本4809之回函率爲95.1%，57年淨樣本2724之回函率超過90%；64年農校畢業生淨樣本864之回函率爲84.6%，農專畢業生淨樣本232之回函率爲82.76%，78年之回函率顯然低於以前之各次研究，回函率之幅度自71年畢業之約22%至44年畢業曾於64年回函之50.64%。

78年所採用之研究方法大致沿襲以前各次，回函率之偏低因素固多，但主要者或爲下列四項：

1. 畢業生與其母校間關係之轉變：由入學人數衆多，班級擴大，教師課業負擔加重及其他原因使校長及教職員被尊敬之程度降低。

2. 社會之變遷；社會由鄉村型態轉變爲城市型態，導自家庭富裕之個人較多之自由，膨脹且便捷之交通，由市場競爭之廣告信函証明消費主義意識之高漲以及其他多種因素致使畢業生對來自母校之問卷信函予以漠視。

3. 中興大學中止辦理農業教育學系，過去因有該系之存在，能與各農校保持較密切之關係，以前各項研究工作皆因能互相配合而順利推展。

4. 郵寄問卷之方式，以前各次研究均以"限時專送"郵寄問卷或能提示畢業生問卷之重要性，78年之投寄方式以較爲經濟之平常郵件寄發。

The relatively low rate of response in 1989 tends to decrease the reliability of the data from this study and to reduce the extent to which the findings may be assumed to represent the larger population. However, one check was made on the respondents for the graduation years of 1950, 1955, 1959, 1964, and 1969. The proportion of the respondents who were in each quartile of their class was compared between those who responded in 1975 with the respondents from the same groups in 1989. The comparison is shown below and the differences appear to be most significant for the 1969 respondents. However, additional tests need to be run to detemine whether or not the 1989 respondents were essentially like, or unlike the original responding groups.

Table 3. Populations, Samples, Net Samples and Respondents for 1989 Study of Taiwan Vocational Agriculture Graduates

表三. 民國78年研究台灣農校畢業生、群體、樣本、淨樣本及回函數

Year of Graduation 畢業年度	Previous Research* 前期研究			1989 Research 78年研究			
	Original Population 原群體數	First Year Incl. 初用年	lst Sample Number 初用樣本數	Sample 樣本數	Net** Sample 淨樣本數	Resp onses 回函 Number 人數	Percent 百分率
1950	641	1962	594	192	151	64	42.38
1955	1.396	1962	592	200	156	79	50.64
1959	2.495	1962	823	249	203	90	44.33
1964	2.483	1968	386	276	220	72	32.73
1969	3.794	1975	646	263	207	63	30.43
Sub-total小計	8.326		3.041	1.180	937	368	39.27
1982:(71)All V-A全農校	4.496						
(6 5chools)(六校)	1.740	1989	183	183	145	32	22.07
(4 Curricula)(四科)	883						
1984:(73)all V-A全農校	5.290						
(6 schools)(六校)	2.040	1989	212	212	178	45	25.28
(4 Curricula)(四科)	993						
Sub-total(6 Sch) 小計(六校)	3.780		395	395	323	77	23.84
(4 Curricula)(四科)	1.876						
Total 總計	12.106		3.436	1.575	1.260	445	35.32

* Three previous studies (1962, 1968, and 1975) provided the foundation for the 1989 study In 1989 the sampling was from only four of the curricula (with sampling fraction shown in parenthesis): Farm Management(1/4), Agricultural Machinery(1/6), Animal Husbandry(1/5), and Horticulture(1/4). The six schools were located at Hualien, Kwansi, Taichung, Tainan, Chiatung and Jenai.

前此之三次研究(51,57及64年)奠定此次研究之基礎，民國78年之研究僅自四種科別抽取樣本(括弧中爲取樣比)：農場經營(1/4)，農業機械(1/6)，畜牧(1/5)及園藝(1/4)六所農校分別位於花蓮、關西、台中、台南、佳冬及仁愛鄉。

** Net Sample = Sample - (Died + Address Unknown). when possible RESERVE SAMPLE respondents were substituted for ADDRESS UNKNOWN.

淨樣本＝樣本－（死亡＋地址不詳），如可能，以備用樣本遞補。

78年之研究，偏低之回函率，或將影響資料之信度以及對群體之代表性，經檢驗39、44、48、53及58各年期之回函者，在其各年期之四分位率以64年回函者與同組78年回函者予以比較，如下表所示，顯示58年期回函者與其他年期者是否相似，尚待進一步測試。

Year of Grad 畢業年期	Responses 回函 Year 年期	Number 人數	Percent 百分比 Top 1/4	2nd 1/4	3rd 1/4	4th 1/4
'50, '55	1975	1024	28	24	25	24
'59, '64	1989	281	30	28	23	20
1969	1975	550	26	26	29	20
	1989	63	27	24	37	13

Source : Data from previous studies and the 1989 study.
資料來源：來自前期及78年研究之數據

Chapter II
第二章

BACKGROUND FOR THE STUDY
研究之背景

The outstanding advancements in agriculture during the past 40 years in Taiwan has generated much interest around to world. Some agricultural scientists have described the achievements as very impressive, and sometimes as a modern miracle (Hou, 1978; Lucas, 1981; Spaeth, 1966; Wittwer, 1982).[3] The formal education programs at the secondary and tertiary school levels and the nonformal education programs through various extension services have contributed to that progress.

台灣過去四十年在農業發展上有輝煌之成就，激起全世界之注意，某些農業學家認爲予人深刻之印象，有者稱爲近代之奇蹟。中、高級之正規教育以及不同推廣單位實施之非正規教育導致此項發展。

Schooling and Work
學業與就業

The role of schooling in career development and achievements of individuals has been a subject of study for many years and in many countries. A report[4] by the Educational Systems Research Institute (1968) described the vocational outcome from secondary level schooling in the form of an hypothesis that the product was the consequence of an interaction of three major factors: the school system, the human resource, and the opportunity = the vocational outcome. This should be understood as meaning that the graduate is not a product of the school in the sense that the output from a factory is the product of the factory. The school system with its courses, facilities, teachers, counselors, and more constitute a significant input but the student, his family, his church, and other environmental influences along with the nature of the economic activities of the area constitute two other sets of major influences.

學業在個人職業開拓及未來成就所居之角色，長時期以來在許多國家中爲一研究之課題，由教育體系研究所辦成之報告認爲中等職業教育之出處，如以學說型式說明即是等於三種因素：學校體系、人類資源及機會三者交互作用之產品，此一觀點自不能認爲畢業生猶如工廠中之製品，爲學校之產品，學校體系中所擁有之校長，教師、課程、設備等固爲一有意義之投產設備，但學生本人及其家庭、宗教，其他環境因素之影響以及該地區之經濟活動，構成另兩項之重要影響因素。

Agricultural Education System
農業教育體系

The transition from school to work , from schooling with a focus on agriculture (vocational agriculture programs) to entrance and advancement in agricultural occupations, is now recognized to be a complex phenomenon. Agricultural education, both formal and informal is seen as being a part of both the larger educational system and the agricultural system.

As a part of the agricultural system, agricultural education is only one of many parts for producing, marketing, processing, distributing, and financing food and fiber. Some other components such as technology development, national policies, and international dimensions are important parts of the agricultural system.

The educational system includes various levels for operations and policy, examinations, financing, teacher education, administration and supervision. It includes primary, secondary and higher education; and it includes the research and in-service activities for education. Agricultural education at the secondary and higher education levels in Taiwan constitutes only a small proportion of the total system.

The school provides a systematic means for helping youth learn what is described as theory and practice; understandings, skills and attitudes; and competencies, values and behaviors.

Enrollment in agricultural curricula in the Taiwan schools is based on many factors, only one of which may be the interest of the student in that curriculum. Enrollment is far more dependent upon (1) policy decisions at the government level regarding the number and kind of classes to be offered during the coming year, (2) the junior middle school attended and placement within the middle school, and (3) the performance of students on external examinations for entrance into senior schools.

自求學轉入就業，自農業職業學科進入農業性就業領域，現今成認爲一綜錯複雜之情況，正規的及非正規的農業教育均爲大範圍之教育體系及農業體系之一部門。

農業教育在農業體系生產過程中包括生產、銷售、加工、分配、食物衣物價格之調節等，其他如技術之開發，國家之政策，國際間之交流亦均爲農業體系中重要之一環。

教育體系包括不同層次之有關行政、考試、財務、教學、管理及督導等，函蓋初等、中等及高等教育階層之農業教育僅爲此一體系中之一部分。

學校提供系統性之方法協助青少年學習理論與實務，包括知識、技術、態度、能力、價值觀以及行爲。

在台灣進入農科就讀有若干因素，其一爲學生是否對某科別具有興趣，但更將視(1)教育當局對來年各科招生人數所作之決定(2)報考人數之多寡，(3)學生考試之成績。

Education is Lifelong
教育爲終生之事

Many people no longer look at education as something that happens between ages five and twenty-four. It is seen as lifelong. Many children are in pre-school programs and many adults attend community colleges, workshops and special training sessions lasting from one day to even more that one year.

The options available to youth as they proceed through the schooling and after they have completed the formal schooling, vary considerably from country to country and from group to group within countries. The nature of the schooling options vary; the level of affluence of the youth and their parents affects options; the general expectations of parents and society in general vary; government policies vary; and the variations in the level of economic activity within a country or region may drastically affect the options available to the youth.

現今教育已不再被多數人視爲僅屬於五歲至二十四歲間之兒童至青年之事而視爲終生之事。衆多兒童接受學前教育，成人接受後續教育，研習會之舉辦有者僅爲一天，亦有延續至一年以上者。

青少年接受何種教育有自由選擇之權，各國規範不同，受教之選擇其本質不同，因經濟條件，家長及社會之期望，政府之政策，國家經濟活動之變遷等因素而有所影響。

Transition from School to Work is Complex
自學校轉入就業情況多變

The transition from schooling to work may be so complex that one should not describe it as a problem for which their are solutions. Rather, it is more appropriate to look at the transition from schooling to work as a consequence of dynamic factors of which formal education at the secondary level is only one of many.

The school should be held accountable for the scope and quality of educational services which it provides to the students. That represents the "output" from the schools.(Lindman, 1971)[5] From this concept we could infer that the attitudes, knowl-

edge, and understandings held by the graduate, are a product of school, family, church, and community. His/her aspirations and career goals have been influenced by more than the school.

自學校轉入就業其情況至爲複雜，不宜視爲一已有答案之課題而實爲衆多動態化因素之匯集，正規之中等教育僅爲其中因素之一。

學校應向學生盡其所能提供有關教育方面之教導工作，此可視爲來自學校之"輸出"。由此概念，當可推斷畢業生之風度、學識、通達實爲學校、家庭、宗教社會等各方面之融匯累積，影響青年之理想，就業之期望者非僅學校一端而已。

Some U. S. Experiences
美國經驗

In the United States there has been a vocationalism movement in the schools which perhaps had its visible beginnings in the Morrill Act of 1862 which provided the legal base for Federal involvement in the establishment of the Land Grant colleges and universities.

The role of the school in vocational education in the United States is still one which draws considerable controversy, even after more than 70 years since passage of the Smith-Hughes Act in 1917 and more than 125 years since The Morrill Act in 1862. A report by the National Commission on Excellence in Education (1983)[6] recommended that all secondary school students (grades 9-12) complete "•••(a) 4 years of English; (b) 3 years of mathematics; (c) 3 years of science; (d) 3 years of social studies; and (e) one-half year of computer science. For the college-bound, 2 years of foreign language ••• are strongly recommended..." (A Nation at Risk,P.24)

About two years later another report by a national commission, The National Commission on Secondary Vocational Education, made recommendations for expanding the access of vocational education to all students and for strengthening the diversity and basic skill content of courses. (The Unfinished Agenda, 1984)[7]

Although there may be conflicting philosophies about the purposes and programs for public schools in the United States, the decentralized system allows for diversity of viewpoints. The local school district system provides for programs to be responsive to the viewpoints and needs of the local communities within the framework of state and federal policies. Historically, vocational education has been conducted as part of comprehensive schools rather than through a dual system of schools.

美國在1862年通過莫里爾法案，一時在學校中興起職業化主義之風尚，

該法案提供聯邦政府設立捐地大學院校之法律基礎。

美國學校中之職業教育應具何種角色，在國會於1917年通過斯密士－休斯法案後70年，甚至1862年通過莫里爾法案後125年仍有甚大之爭議。國家傑出教育委員會(1983)之報告主張所有中等學校學生(9-12年級)應修習…(a)4年英文(b)3年數學(c)3年科學(d)3年社會科學及(e)一年半之計算機科學，欲進大學者應加修兩年外國語。

約兩年後另一委員會：國家中等職業教育委員會，提出之報告主張職業教育應擴及每一學生並應加強課程中基本及特殊之技術。

雖然美國各界對公立學校之目標及規畫有互相抵觸之理念，但分權化之制度能兼容並蓄，地方學區制適應當地之要求，在州及聯邦政府政策架構之內，自行安排其教育計畫。歷史上，美國之職業教育爲綜合高中之一部分而非並行之雙軌制。

Some Taiwan Experiences
台灣經驗

The purpose of schooling in Taiwan is found in the Constitution of the Republic of China. It is based on the Three Principles of the People (nationalism, democracy, and people's livelihood) which were underlying principles enunciated by the founder of the Republic of China in 1911, Dr. Sun Yat Sen. (Education in the Republic of China, 1989)[8] A frequently translated and reported Article about education and culture from the Constitution is Article 158. Education and culture shall aim at the development among the citizens, of the national spirit, the spirit of self-government, national morality, a healthy physique, scientific knowledge, and the ability to earn a living.(Education in the Republic of China, (p.4)

A positive relationship between vocational education and industrialization has been recognized by leaders in Taiwan for many years. K.T.Li (1961)[9] indicated that in order to develop the human resources to support industrialization it would be necessary to provide technical education in colleges and vocational training in schools. Harbison (1973)[10] has reported that the rapid industrialization, high rate of economic growth, and low level of unemployment in Taiwan during the decade of the 60's"... was the consequence (italics in original) of a constellation of policies designed to utilize with maximum effectiveness the country's great wealth of human resources." (p.47) In addition, Harbison has indicated that the relatively well educated pool of manpower and the well-developed educational system in Taiwan also contributed to the availability of "entrepreneurial, managerial, and administrative talent."(Harbison, p.51)

By changing policies the government has kept the educational system in tune with

the rapid industrialization. In 1968 the grade level for compulsary education was raised from grade six (at the end of the primary school) to grade 9 (at the end of the junior middle school). At the same time encouragement was given to the establishment of private vocational and technical schools with advisory committees from the private sector. In 1986-87 there were 204 senior vocational schools, of which 89 were public; 175 senior (academic) high schools of which 80 were public; and 77 junior colleges of which 21 were public and 56 were private.[11] The junior colleges were primarily industrial and commercial technical colleges which enrolled students into two types of programs: 5-year programs for students directly from junior middle school, and 2-year programs for graduates from either senior academic or senior vocational schools.

在台灣，人民接受教育之目的，植基於孫中山先生創建之三民主義之理念，載於中華民國憲法之中。

憲法第158條：「教育文化應發揚國民之民族精神，自治精神、國民道德、健全體格與科學及生活智能」。

台灣政府領導階層長久以來即已體認職業教育與工業化兩者間之互動關係，李國鼎氏早年(51)指出欲開發人力以促進工業化必須於中學中推展職業教育，專科學校中推展技術教育。哈比遜氏(62年)認爲台灣在50年代之十年中，快速工業化高速度之經濟成長以及低失業率，導因於諸多明智之政策中能充分利用人力資源，哈氏復指出，良好之教育體系亦能適時提供具有企業化，經理及管理能力之人才。

在快速工業化之進程中，政府亦能同步的調整教育政策，六年國民教育於民國57年延長爲九年，同時鼓勵私人興辦職業及專科學校并組顧問委員會監督之，民國75-76年間共有204所高級職業學校，其中89所爲公立，175所高級中學，其中80所爲公立，175所高級中學，其中80所爲公立，77所專科學校，其中21所爲公立，私立者有56所，專科學校以工業及工商管理方面者居多，有兩種制別其一爲招取國中畢業生之五年制及招收高中、高職畢業生之二年制。

Experience in Other Countries
其他國家之經驗

There have been several studies and reports about the transition from school to work in European as well as developing countries. Some of the studies were prompted by the high level of youth unemployment in the countries during the 60's. A general question asked when reviewing those reports was: What are the factors which seem to affect the extent of satisfactory transition from school to work and how may these be applied to the agricultural sector? In general, the countries re-

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ported experiences with different public policies regarding schooling and employment. The achievements regarding employment of school graduates into the labor force were mixed at best. For a list of some of those reports the reader is referred to their citations in the endnotes.[12]

歐洲及其他若干開發中國家亦有關於自學校轉入就業方面之研究報導，某些研究係因其國內在1960年代失業青年人數過多所激起，當檢討此等報告經常詢及之問題爲：影響自學校轉入就業連滿意程度均有何種因素，并對農業領域之適用性爲何？一般言，各國依其不同公共政策之經驗說明其青年就學就業之情形，關於畢業生轉入勞動力之成就，優劣互見，備註中所列資料可供參閱。

Chapter III
第三章

PRESENT PROGRAMS OF VOCATIONAL AND TECHNICAL EDUCATION IN AGRICULTURE IN TAIWAN
現階段台灣之農業職業及專科教育

The vocational and technical education programs in agriculture in Taiwan are under the Ministry of Education. The vocational programs are a part of the secondary school system and the technical programs are a part of higher education.

台灣之農業職業及專科教育分別隸屬於台灣省教育廳及教育部，職業教育屬中等教育之一環，專科教育則爲高等教育之一部分。

Vocational Agriculture Programs
農業職業教育

The Schools
學 校

The vocational agriculture programs were conducted through three kinds of schools within the secondary system of academic and vocational senior middle schools. The twenty-four programs of vocational education in agriculture were in senior level middle schools and consisted of one program in an academic school, six in senior vocational agriculture schools, and 15 in senior vocational agriculture and industry schools.

The programs were in schools which were located in 14 of the 16 counties. The only counties without any vocational agriculture programs were Taipei and Penghu. In addition, there were five special municipal areas (Keelung City, Hsinchu City, Taichung City, Chiayi City, and Tainan City). Two of these cities had vocational agriculture programs: Tainan City and Taichung City.

Taipei City and Kaohsiung City are national cities. Taipei City, the capital city, had a vocational agriculture program but it was not included in the study.

農業職業教育在中等教育階段中之高級中學及職業學校體系內區分爲三種類別；二十四所學校中有六所爲高級農業職業學校，十五所爲高級農工職業學校及一所設有農科之綜合高級中學。

省轄16個縣中有14個設有農校，台北縣及澎湖縣未設農校，五個省轄市(基隆市、新竹市、台中市、嘉義市及台南市)中，台中市及台南市各設有一所農校。

台北市及高雄市均爲院轄市，定爲首都之台北市其學校系統中設有農校，但未包括在本次研究之範圍內。

The Curricula
科 別

There were nine agricultural curricula and one home economics curriculum included in the vocational agriculture programs in Taiwan. They were as follows:

台灣農職教育體系中原有農業科別九種及農村家政科，計：

Farm Management 農場經營	Forestry 森林
Agricultural Machinery 農業機械	Horticulture 園藝
Agricultural Civil Engineering 農業土木	Agronomy 農藝
Animal Husbandry and Veterinary 畜牧獸醫	Sericulture 蠶絲
Food Processing 食品加工	Rural Home Economics 農村家政

The present-day curricula were a revision of the curricula which had been adopted in 1974 by the Ministry of Education. In general, the revised curricula were stated to have the purpose of developing modern agricultural management persons with positive attitudes for rural development. In addition, three objectives were stated:

1. To teach the knowledge and techniques of modern agricultural management so that the students may become basic employees in agriculture;
2. To cultivate dedication to job and the desire to be professional, high moral pesons; and
3. To help students develop abilities to adapt, create, and continue to seek additional learning.[13]

現今科別之種類係重新調整并經教育部於民國六十四年核定，并釐訂下列三項教學目的，指出培養現代農業經營人員之明確目標。

1. 傳授農業經營所需之基本知識與技能
2. 培養敬業樂群之專業精神與職業道德
3. 奠定學生適應、創造、發展之基本能力

The Rural Home Economics curriculum was offered by 13 of the schools and the curriculum was designated primarily for rural females. Table 4 shows the curricula of-

fered by the schools by county. The 24 schools provided access to 105 offerings of the ten curricula. The counties with the most curricula offered were Tainan (13), Taichung (12) and Pingtung (10). The most frequently offered curricula were as follows:

有13所學校設置農村家政科，以教育農村婦女爲主要目的，以縣爲單位各校設科情形見表4。24所學校在各種科別中提供105科次，設科最多之縣別依次爲台南(13)，台中(12)，及屏東(10)，設科類別最多者之次序如下：

Food Processing食品加工	20
Animal Husbandry and Veterinary畜牧獸醫	18
Agricultural Machinery農業機械	17
Farm Management農場經營	15

Several of the schools have six or more agricultural curricula as shown in Table 4. Those schools are: Hualien, 8; Taichung, 8; Ilan, 7; Tainan, 7; Miaoli, 6; and Chiatung, 6. The six schools which offer only agricultural curricula, also known as the "pure" vocational agriculture schools, are Kwansi V-A, 4 curricula; Taichung V-A, 8 curricula; Jenai V-A, 5 curricula; Tainan V-A, 7 curricula; Chinatung V-A, 6 curricula; and Hualien V-A, 8 curricula.

The Farm Management Curriculum was available in all except one of the counties, Chiayi, which was a strong production agriculture area. In addition, the county had no vocational agriculture programs in Animal Husbandry and Veterinary and Horticulture; and no Rural Home Economics curricula.

Each of the curricula is based on three years of study with the school year being August 1 through the following July 31, divided into two semesters, each approximately 18 weeks in length. Students go to school five and one-half days per week with 36 hours per week being the standard.

若干學校具有六種以上之科別，見表4。即：花蓮，8；台中，8；宜蘭，7；苗栗，6；及佳冬，6。有六所僅具有農業類科別所謂"純"農校者，爲關西農校，4科；台中農校，8科；仁愛農校，5科 ；台南農校，7科；佳冬農校，6科；及花蓮農校；8科。

各縣中，除號稱爲農業縣份之嘉義外，農校均設有農場經營科，位於該縣之各農校，亦未設有畜牧獸醫科，園藝科及農村家政科。

各科教學時限均爲三年，每年分爲兩學期，八月1日學年度開始至次年七月31日。每學期授課約18周，每周上課五天半，一般授課時數每周爲36小時。

Table 4. Senior Schools by County with Vocational Agriculture Curricula, 1988-89.
表四. 依縣際區分，各農校設科類別(77學年度)

County 縣別	School 學校	No.	Curricula 科別 Farm Mgmt* 農場經營	Agric Mach 農業機械	Ag Civil Engr 農業土木	A.H. & Vet 畜牧獸醫	Food Proc. 食品加工	For-estry 森林	Horti-culture 園藝	Pural H.E. 農村家政	Silk. 蠶絲
Ilan宜蘭	Ilan UA&I宜蘭農工	7	y	y		y	y	y	y	y	
Taoyuan桃園	Taoyuan VA&I桃園農工	4	y	y		y			y		
	Lungtan VA&I龍潭農工	4	y			y	y		y		
Hsinchu新竹	Kwansi V-A關西農校	4	y			y	y			y	
Miaoli苗栗	Miaoli VA&I苗栗農工	6	y	y		y	y	y		y	
	Tahu VA&I大湖農工	2					y				y
Taichung台中	Taichung V-A台中農校	8	y	y	y	y	y	y	y	y	
	Wufeng VA&I霧峰農工	4		y			y		y	y	
Changhwa彰化	Yuanlin VA&I員林農工	5	y	y		y	y		y		
Yunlin雲林	Huwei VA&I虎尾農工	3		y		y	y				
	Hsilo VA&I西螺農工	3		y		y	y				
	Peikang VA&I北港農工	3	y	y		y					
Nantou南投	Jenai V-A仁愛農校	5	y		y			y	y	y	
Chiayi嘉義	Tungsheh VA&I東石農工	1					y				
	Minghsiung Acad民雄高中	2		y			y				
Tainan台南	Tainan V-A台南農校	7		y	y	y	y		y	y	
	Tsenwen VA&I曾文農工	3				y	y		y		
	Peimen VA&I北門農校	3			y	y	y				
Kaohsiung高雄	Chisan VA&I旗山農工	5	y	y		y	y			y	
	Kangshan VA&I岡山農工	3		y			y			y	
Pingtung屏東	Chiatung V-A佳冬農校	6	yy*	y		y	y			y	
	Neipu VA&I內埔農工	4	y	y		y				y	
Taitung台東	Taitung VA&I台東農工	5	y	y		y	y			y	
Hualien花蓮	Hualien V-A花蓮農校	8	y	y	y	y	y	y	y	y	
	No. Schools總計	24	15	17	5	18	20	5	10	13	1

Source: Reports from the schools during February-March 1989. Y = School offers curriculum. 設有該科
資料：78年各校填報

*Includes Agronomy Curriculum (offered only by Chiatung) in addition to Farm Management.
佳冬農校除有農場經營科外尚有農藝科

The courses within each curricula are divided into general subjects, science courses, professional courses and practice, physical education, other professional subjects and experimental subjects. In general,the students spend about 30 percent of their time in the general subjects; from 7 to 15 percent of tbe time in science subjects; and from 37 to 47 percent in the professional related courses. In addition, the students have about 10 percent of courses which are identified as electives. The electives usually are additional courses in their professional field. The distribution of hours for all of the curricula may be seen in Table 5.

The Farm Management and Forsestry curricula had the highest percentage of time spent in professional related courses (47%), and Farm Management had the lowest percentage of time in science courses (7%). The Farm Management curriculum was somewhat unique in that during the final semester in the third year the students were to be away from the school, on farms, usually the home farm.

各科所授課程區分爲普通學科，自然學科，專業學科及實習、體育，其他專業學科及實習。一般言，普通學科約占總時數30%，自然學科占7－15%，專業學科占37－47%。此外，尚有10%爲選修科目，多屬與專業科有關者，見表5.

農場經營科及森林科專業性學科所占比率最大(47%)，前者自然科學科目所占比率最少(7%)，該科學生第三學年第二學期返回自家農場實際操作農事爲其獨特之處。

The Students
學 生

There were nearly 18,000 students enrolled in the nine agricultural curricula in the 24 schools during 1988-89. Five of the schools (Hualien, Taichung, Yuanlin, Tainan, and Chiatung) enrolled 37 percent of the total, as shown in Table 6. Eleven of the 24 schools enrolled 800 or more students in agriculture.

77學年度24所學校約有18000名學生就讀於九種農業科別，其中五校(花蓮、台中、員林、台南及佳冬)占入學人數之37%見表6。十一校800餘名學生就讀農科。

Table 5. Number and Percent of Hours for Course Areas in the Revised Vocational Agriculture Curricula
表五. 農校各科授課時數

Curricula 科別		Total Hrs/Wk* 時/周	Hours per Week over 2 Semesters, 3 Years.** 三年總時數						
			General Subjects 普通學科	Science Courses 自然學科	Professional 專業性 Courses 授課	Professional 專業性 Practice 實習	Phys. Activ. 體育	Electives 選修	Total 總計
Farm Management		36	65	16	73	29	11	22	216
農場經營	Percent%		30.09	7.14	33.80	13.43	5.09	10.19	100.00
Horticulture		36	66	28	90	0	12	20	216
園藝	Percent%		30.56	12.96	41.67	0.00	5.56	9.26	100.00
Forestry		36	66	28	88	14	12	8	216
森林	Percent%		30.56	12.96	40.74	6.48	5.56	3.70	100.00
Ani. Husb& Vet.		36	66	34	66	18	12	20	216
畜牧獸醫	Percent%		30.56	15.74	30.56	8.33	5.56	9.26	100.00
Agr. Machinery		36	66	31	35	46	12	26	216
農業機械	Percent%		30.56	14.35	16.20	21.30	5.56	12.04	100.00
Food Processing		36	66	32	50	30	12	26	216
食品加工	Percent%		30.56	14.81	23.15	13.89	5.56	12.04	100.00
Agr. Civil Engineering		36	66	28	86	0	12	20	216
農業土木	Percent%		30.56	12.81	39.81	0.00	5.56	9.26	100.00
Sericulture		36	66	28	88	0	12	22	216
蠶絲	Percent%		30.56	12.96	40.74	0.00	5.56	10.19	100.00
Rural Home Econ.		36	64	28	90	0	12	22	216
農村家政	Percent%		29.63	12.96	41.67	0.00	5.56	10.19	100.00

Source: Vocational Agriculture Curriculum Revision Principles by Taiwan Provincial Governmnet, Provincial Department of Education (Assembled by Yuanlin VA&I School). May 1988 P. 18-19. (In Chinese) 員林農工代編台灣省教育廳公布農校各科授課綱要(77年)

* The school week includes Monday-Friday Plus a 1/2-day on Saturday. 授課日數自周一至周五並周六上午。

**Calculated by totaling the hours/week for each semester for each of the three years. For example, 2 hrs./week, 2 sem. for 3 yrs. = 12.
統計三學年每學期每周時數而得，如每周二小時，上、下兩學期連續三年即是12小時。

Table 6. Enrollment in Agricultural Curricula by School and Gender,1988-89.
表六. 農校各科就讀學生性別(77學年度)

Schools 學校	Number Curricula 科別數	Enrollment 學生數 Boys 男生	Girls 女生	Total 總計 Number 人數	Percent %
Ilan VA&I* 宜蘭農工	7	547	332	879	4.91
Taoyuan VA&I 桃園農工	4	527	170	697	3.90
Miaoli VA&I 苗栗農工	6	498	421	919	5.14
Hualien V-A** 花蓮農校	8	653	476	1,129	6.31
Taichung V-A** 台中農校	8	714	684	1,389	7.82
Yuanlin VA&I 員林農工	5	635	490	1,125	6.29
Tainan V-A** 台南農校	7	815	768	1,583	8.85
Taitung VA&I 台東農工	5	232	397	629	3.52
Lungtan VA&I 龍潭農工	4	454	464	918	5.13
Kwansi V-A** 關西農校	4	387	451	838	4.68
Tahu VA&I 大湖農工	2	71	242	313	1.75
Wufeng VA&I 霧峰農工	4	210	309	519	2.90
Huwei VA&I 虎尾農工	3	452	188	640	3.58
Hsilo VA&I 西螺農工	3	343	55	398	2.23
Peikang VA&I 北港農工	3	336	8	344	1.92
tungshih VA&I 東石農工	1	15	129	144	0.81
Minghsiung Acad 民雄高中	2	344	188	532	2.97
Tsenwen VA&I 曾文農工	3	88	414	502	2.81
Peimen VA&I 北門農工	3	192	240	432	2.42
Chishan VA&I 旗山農工	5	384	425	809	4.52
Kangshan VA&I 岡山農工	3	113	303	416	2.33
Chiatung V-A** 佳冬農校	6	726	706	1,432	8.01
Jenai V-A** 仁愛農校	5	321	153	474	2.65
Neipu VA&I 內埔農工	4	465	352	817	4.57
Total 總計	105	9,522	8,365	17,887	100.00

Source: Reports collected from the schools druing Feb-Mar 1989
資料來源：77年春各校填報

* The Prouincial Ilan Uocational Agriculture and Industry School has been converted to National Ilan Agriculture and Industry Institute. Summer 1989 was the last enrollment of senior uocational students.
宜蘭農工已改制爲專科，77年爲農校最後招生之年。

**Enroll only vocational agriculture students. 僅有農科學生。

Most of the enrollment (84%) was in five curricula:

多數學生(84%)就讀於下列五科科別：

Food Processing 食品加工	4204
Agricultural Machinery 農業機械	2965
Farm Management 農場經營	2820
Animal Husbandry and Veterinary 畜牧獸醫	2568
Rural Home Economics 農村家政	2464

Gender of Students

About 47 percent of the total enrollment in the vocational agriculture programs was female as shown in Table 7. However, most of the females were in three curricula: Horticulture (64%), Food Processing (77%) and Rural Home Economics (100%). Females constituted 69 Percent of the enrollment in the Sericulture curriculum but only one school offered that curriculum and the total enrollment was 162. It was observed that the enrollment of females in the curricula varied considerably among some of the schools. For example, in the Hsilo school, only 48 (or 36%) were females out of the 134 enrolled in Food Processing. At the Jenai school 39 (or 35%) of the enrollment in Horticulture were female compared to 64 percent for all of the schools.

The variations in enrollments by gender were probably due to a combination of three major factors: First, the total number of students applying for admission to the various agricultural curricula; second, the comparative scores made by those who applied; and third, the number who indicated that particular major as a possible choice for study.

There has been a major increase in the enrollment of females during the period from 1974-75 to 1988-89. The enrollment in 1974-75 was 77 percent male and only 23 percent female. At that time 45 percent of the Horticulture students were female, 26 percent of the Food Processing students, and 51 percent of the Sericulture students.[14]The enrollment by curriculum, year in school and gender is shown in the Appendix, Table A.

學生性別

就讀農校之學生，約有47%爲女生，見表7.多數女生集中於三種科別：園藝(64%)，食品加工(77%)，及農村家政(100%)，蠶絲科有69%爲女生，但僅有一校設置。該科學生共162人，女生就讀之科別在某些學校間有相當顯著之區別，例如，西螺農工食品加工科134名學生中，女生僅有48名(36%)，

仁愛農校園藝科之女生僅有39名(35%)，而全校女生所占比率則爲64%。

不同科別兩性間人數之差異，可能由三種因素造成，第一，就讀各農業科別學生之總數；第二，各生考試獲分之差異；第三，申請進入某科就讀人數之多寡。

民國63～77年期間，女生入學人數有明顯之增加，63年男生占77%，女生僅有23%，彼時園藝科之女生占45%，食品加工科26%，蠶絲科51%，參見附錄表A。

Table 7. Number and Percent Enrolled by Curriculum and Gender, 1988-89.
表七. 各科入學學生之性別

Curriculum 科別	Number 人數			Percent 百分率	
	Male 男生	Female 女生	Total 總計	Females* 女生	Total** 總計
Farm Management*** 農場	2,177	643	2,820	22.80	15.77
Horticulture 園藝	489	859	1,348	63.72	7.54
Forestry 森林	508	87	595	14.62	3.33
Food Processing 加工	953	3,251	4,204	77.33	23.50
Ani Husb & Vet. 畜醫	1,875	693	2,568	26.99	14.36
Agr Civil Engineering 土木	573	188	761	24.70	4.25
Agr Machinery 農機	2,897	68	2,965	2.29	16.58
Sericulture 蠶絲	50	112	162	69.14	0.91
Rural Home Econ 家政	0	2,464	2,464	100.00	13.78
Total 總計	9,522	8,365	17,887	46.77	100.00

Source: Reports from schools
來源：各校填報

*Percent females in each curriculum.
各科女生百分數

**Enrollment in each curriculum as percent of total enrollment.
各科占總數百分數

Residence When Students Enrolled

Slightly more than one-half of the 1988-89 students came from residences which were described as farm as shown in Table 8. The farms were either within geo-political units called cities or in rural areas within counties. For example, the political boundary of the City of Taichung encompasses considerable farm area. Many of the rural areas of Taiwan have experienced much increase in population and have been

the sites for location of industries. And most of the cities which at one time had many farmers within their boundaries, now have many industries and smaller amounts of land available for farming. In some ways, it is surprising to find that more than one-half of the 1988-89 students come from farm residences.

學生入學時之住所

77年在學學生約有略多於半數居住於農村，見表8. 所謂農村，涵蓋行政區劃之市區或縣區中之鄉村地帶，例如台中市之行政區劃包括相當廣大之農業地區，甚多之農業地區屢見有人口衆多並有工廠設施之情況，並有許多城市原有衆多農民現已混有工業設施，經營農事之土地亦日趨狹小，自某一觀點視之，77年農校學生有半數以上居住於農村一事令人詫異。

Occupations of Parents When Students Enrolled

The occupations of slightly less than one-half the parents of the students was reported as agriculture. The occupations of the other parents were in industry (21%); commerce (16%); and seven percent in governmnent and education as shown in Table 9.

It shouid be noted that the range of the proportion of students whose parents were employed in agriculture was from 82 percent in Peikang VA&I to 14 perent in Kangshan VA&I. (See Table 8 in the Appendix) For the six V-A schools the range of proportions was as follows:

入學時家長之職業

農校學生家長之職業約有將近半數從事農業，其他學生家長之職業，有從事工業(21%)，商業(16%)以及百分之七任職於公教機關者，見表9。

家長從事農業者其幅距自北港農工百分之82至岡山農工之百分之14(見附錄表B)六所農校之比率如下列所示：

	%Parents in Ag家長從農之百分率
Hualien V-A 花蓮農校	50.66
Taichung V-A 台中農校	45.80
Tainan V-A 台南農校	34.60
Kwansi V-A 關西農校	51.92
Chiatung V-A 佳冬農校	59.50
Jenai V-A 仁愛農校	NO Report無資料

Table 8. Place of Permanent Residence for Taiwan Uocational Agriculture Students; 1988-80.

表八. 農校學生家長長久居所

Permanent Residence 永久居所	Total 總計	
	Number 人數	Percent%
Farm 農村		
Rural 鄉間	7,886	46.76
City 城市	963	5.77
Sub-Total 小計	8,769	52.53
Non-Farm 非農村		
Rural 鄉間	3,737	22.39
City 城市	3,584	21.47
Sub-Total 小計	7,321	43.85
Umdnown 不詳	604	3.62
TOTAL 總計	16,694	100.00

Source: Reports from 20 senior schools which had such records available on students enrolled in agricultural curricula during 1988-89.
資料源自二十所農校77年入學學生城市意指含有農地之行政單位

Note: City refers to geo-political units which include farm areas.
城市爲行政區域單位，包括農業地區。

Table 9. Occupations of Parents of Vocational Agriculture Students, 1988-89.

表九. 農校學生家長之職業

Occupational Areas 職業類別	Number 人數	Percent 百分率
Agriculture 農業	7,894	48.28
Industry 工業	3,473	21.24
Commerce 商業	2,550	15.59
Professional 專門職業	77	0.47
Gov.& Education 公教人員	1,075	6.57
Police & Military 軍警人員	153	0.94
Other 其他	962	5.88
Unknown 不詳	168	1.03
Total 總計	16,352	100.00

Note. Based on reports recxeived from the schools. Two schools did not report; and three schools were excluded because they included industrial students with the agricultural students.
資料源自農校，其中兩所未填報，三所資料有誤未採用

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Trends in Enrollment

There have been significant changes in the enrollments between 1974-75 and 1988-89, as shown in Table 10. The overall enrollment increased from 12,080 to 17,887, an increase of about 48 percent. The largest increase in numbers of students was in Food Processing which increased from 2506 to 4204 students, an increase of about 68 percnt. The other curriculum in which there was a large increase was in Farm Management,an increase of more than 1200 students.

During the period 1974-75 to 1988-89 there were changes in the curricula offered. The year 1974-75 was the beginning of a transition to revised and new curricula and, again in 1988-89,there was the beginning of implementation of revised curricula. However, one of a new emphasis on instruction to prepare students to become farmers. The Farm Management curriculum was a revision and consolidation of several other curricula, namely Farm Business, Comprehensive Agriculture, and Agronomy.

Additional trends in enrollment may be noted in Table 11 which contains data about the number of third year students enrolled by curriicuis and county in 1974-75 and 1988-89. Only Kaohsiung County experienced a net decrease in third year enrollments, a decrease of approximately nine percent. The three counties which experienced the largest increases were Nantou, Yunlin, and Hsinchu. The percent of change in the overall third-year enrollments by county is shown below.

入學之趨向

民國63年至77年間學生就學之趨向有明顯轉變，見表10，入學總人數由10,080增至17,887人，增加約百分之48，增加最多者爲食品加工科由2,506增至4,204人，約增百分之68，其他增幅較大者爲農場經營科。增加之學生數超過1,200人。

63至77年間曾作若干科別之調整，63年有深遠意義之更張爲著重教學，期使學生畢業後從事農業經營，經整合農藝，綜合農業及農企業等科別或稱謂設置農場經營科。

另有若干變動見表11，該表列有分縣分年各個科別三年級學生人數，其中僅高雄縣三年級生人數淨減約百分之九，南投雲林及新竹爲人數增加較多之縣份，以縣際區分變動之百分率如下所示：

County 縣份	Rank 排名	% Chg 變動	County 縣份	Rank 排名	% Chg 變動
Nantou County 南投	1	169.23	Taitung County 台東	8	53.44
Yunlin County 雲林	2	140.00	Pingtung County 屏東	9	31.91
Hsinchu county 新竹	3	138.95	Tainan County 台南	10	30.02
Taoyuan county 桃園	4	87.50	Ilan County 宜蘭	11	28.70
Chiayi county 嘉義	5	84.13	Changhwa County 彰化	12	23.94
Miaoli county 苗栗	6	75.89	Hualien County 花蓮	13	14.68
Taichung County 台中	7	56.72	Kaohsiung County 高雄	14	-8.87

Table 10. Trends in Vocational Agriculture Enrollments by Curriculum, 1974-75 and 1988-89.

表十. 63及77學年度農校學生就讀科別人數之趨向

Curricula 科別	1974-75(63) No-Percent**(%)		1988-89(77) No-Percent**(%)		Change* 變動 No. Percent(%)	
Farm Management*** 農場經營	1.569	12.99	2.820	15.77	1.251	79.73
Ani Husb & Veterinary 畜牧獸醫	2.225	18.42	2.568	14.36	343	15.42
Agr Civil Engineering 農業土木	648	5.36	761	4.25	113	17.44
Food Processing 食品加工	2.506	20.75	4.204	23.50	1.698	67.76
Agr Machinery 農業機械	2.075	17.18	2.965	16.58	890	42.89
Forestry 森林	579	4.79	595	3.33	16	2.76
Horticulture 園藝	651	5.39	1.348	7.54	697	107.07
Sericulture 蠶絲	162	1.34	162	0.91	0	0.00
Rural Home Econonics 農村家政	1.665	13.78	2.464	13.78	799	47.99
Total 總計	12.080	100.00	17.887	100.00	5.807	48.07

Soure: Reports from the schools and research report in 1975 by Meaders and Hu
資料來自64年之研究報告

* The change is from 1975 to 1989. The percent change was calculated by dividing the amount of change by the enrollment in 1975.
以63年入學人數除以73年兩年間人數之差之百分率

**Percent=Enrollment in each curriculum divided by the total enrollment x 100.
各科人數除以人數×100

*** In 1974-75 Farm Management included Farm Business. Comprehensive Agricultrte.Agricultural Extension and Agronomy.In 1988-89 Farm Management included only Farm Management and Agronomy. The other curricula had been closed.
農場經營科63年包括農企業，綜合農業，農業推廣與農藝，77年則僅包括農場經營與農業，餘均結束.

Table 11. Enrollment in Third Year of Taiwan Vocational Agriculture by County and Curriculum,1974-75 and 1988-89.

表十一. 63及77學年度縣際及科別計農校三年級人數

County 縣別	Year 年度	Curricula 科別								
		Prod. Ag.* 農產	For. 森林	Food Proc. 食品	A.H.& Vet. 畜醫	AgCiv Engr. 土木	Ag. Mach. 農機	Seri-culture 蠶絲	Rural H.E. 家政	Total 總計
Ilan	1974-75	63	42	34	17	0	39	0	35	230
宜蘭	1988-89	79	35	47	40	0	44	0	51	296
Taoyuan	1974-75	113	0	23	96	0	64	0	0	296
桃園	1988-89	231	0	136	94	0	94	0	0	555
Hsinchu	1974-75	19	0	43	33	0	0	0	0	95
新竹	1988-89	44	0	97	40	0	0	0	46	227
Miaoli	1974-75	51	41	46	35	0	0	20	60	253
苗栗	1988-89	80	42	129	40	0	48	53	53	445
Taichung	1974-75	90	20	105	41	23	49	0	81	409
台中	1988-89	134	44	149	52	33	92	0	137	641
Nantou	1974-75	42	0	0	0	0	0	0	23	65
南投	1988-89	76	28	0	0	31	0	0	40	175
Changhwa	1974-75	41	0	78	70	17	36	0	42	284
彰化	1988-89	154	0	95	52	0	51	0	0	352
Yunlin	1974-75	0	0	40	85	18	52	0	30	225
雲林	1988-89	54	0	144	156	0	186	0	0	540
Chiayi	1974-75	0	0	43	27	18	38	0	0	126
嘉義	1988-89	0	0	148	0	0	84	0	0	232
Tainan	1974-75	106	0	182	118	101	60	0	26	593
台南	1988-89	120	0	238	165	131	69	0	48	771
Kaohsiung	1974-75	46	26	54	83	24	79	0	139	451
高雄	1988-89	45	0	99	44	0	90	0	133	411
Pingtung	1974-75	146	0	53	152	0	102	0	111	564
屏東	1988-89	177	0	93	118	0	163	0	193	744
Taitung	1974-75	23	0	20	33	0	27	0	28	131
台東	1988-89	47	0	40	35	0	35	0	44	201
Hualien	1974-75	34	53	26	24	47	71	0	38	293
花蓮	1988-89	76	33	41	33	34	77	0	42	336
Total	1974-75	774	182	747	814	248	617	20	613	4015
總計	1988-89	1317	182	1456	869	229	1033	53	787	5926

Sources: Data were collected from the schools in 1975 and 1989.
63及77年所得之資料

* Enrollments in 1974-75 were combined for Farm Business, Comp-rehensive Agriculture, Agronomy, Horticulture, and Agricultural Extension. Farm Maagement, Agronomy and Horticulture were combined for 1988-89.
63年包括農企業，綜合農業，農藝，園藝及農推，77年包括農場經營，農藝及園藝.

The trends for enrollment by counties must be reviewed in relationship to the trends for enrollment by curricula. The increases in Nantou County(Jenai V-A School)were through the addition of two curricula (Forestry and Agricultural Civil Engineering) and increases in enrollments in Farm Management and Horticulture.

The increases in Yunlin county (Huwei VA&I,Hsilo,VA&I, and Peikang VA&I)came by the addition of Farm Management at Peikang increasses in enrollments in Food Processing and Animal Husbandry & Veterinary.

There is an additional way to look at the trends in enrollment: the relationship between enrollments and the proportion of the farm population as a percentage of the total population in each county and city is shown in appendix Table C. That table also shows the proportion of the total farm population for Taiwan which is in each city and county.

Four of the nine curricula have been selected on a basis of their close relationship to production enterprises: Farm Management and Horticulture have been combined into Production Agriculture, Animal Husbandry and Veterinary, and Agricultural Mahinery. Table 12 contains the combined data about third-year enrollments by county, the percent of the total enrollment for those four curricula by county, and the percent of the total farm population in each county or county/city combination. The top five counties with the highest percentages of the population are shown below with the corresponding rank for the proportion of the V-A enrollments in those counties.

以縣際爲準之就學趨向應與就讀之科別加以對比，南投縣(仁愛農校)增添兩種科別(森林及蠶絲)，農場經營科及園藝科入學人數增加。

雲林縣(虎尾農工,西螺農工及北港農工)之北港農工增添農場經營科,虎尾農工增添農業機械科;食品加工科及畜牧獸醫科入學人數增加。

另一種觀察就學趨向之方法爲檢視該縣農業人口之比率與就學之關連性,附錄表C列示各縣市農業人口占該縣總人口之比率以及占全省農業人口之比率。

九種科別中選定四種視爲與農業生產有密切關係者:農場經營科與園藝科合併爲農業生產,另兩科爲畜牧獸醫及農業機械，表12列示以縣際區分之三年級學生在上述三種生產性農業科別之入學情形及各縣農業人口比率，農業人口最多之前五縣以及該縣農校有關農業生產科別之學生人數如下所示：

	Rank 排名	
	Farm Pop. 農業人口	Ag. Curr 農產科別
Changhwa County 彰化縣	1	6
Yunlin County 雲林縣	2	3
Tainan County & City 台南縣市	3	4
Taichung County & City 台中縣市	4	5
Pingtung County 屏東縣	5	1

The relationship between proportion of the total farm population in each county and the proportion of the third-year enrollment in the four selected curricula is quite limited. The school with the second highest proportion of the enrollment, Taoyuan VA&I, ranks ninth in terms of the farm population. However, with the excellent infrastructure for transportation and communication and the relative small size of the island, these may have limited significance.

各縣農業人口所在占比率與各農校三年級學生在選定之四種科別入學比率間之關係不能充份脗合，桃園農工職校農業生產性科別入學人數高居第二位，但該縣農業人口數卻排名第九，由於台灣面積狹小，交通及資訊設施又極發達，相關事相之解釋自必有其局限性。

The Facilities
設 施

The school facilities include land, livestock, agricultural machinery, food processing equipment, and other facilities such as faculty residences, student dormitories, classrooms, and administrative space.

School Land

School land for student practice and demonstration is essential for the vocational agriculture programs. The average amount of land reported by 23 of the schools was about 27.5 hectares with a range from 4.4 to 191 hectares.About 40 percent of the land was identified as being used for campus and buildings. At three of the schools, over 90 percent of the land was being used for campus and buildings, leaving very little for student practice and/or demonstrations.(See Appendix D for additional detail.)

Table 12. Percent of Taiwan Farm Population by County and City, 1987 and Third Year Vocational Agriculture Enrollment in Production Curricula,1988-89.

表十二. 台灣農業人口分布(縣市)(76年)及農校三年級學生就讀農產科別人數(77學年度)

City/County 市/縣	Percent* of Total Farm Pop. 總農業人口%	Curricula Enrollment 入學人數 Prod. Agr.** 農產	A.H.& Vet 畜醫	Agr Mach 農機	Total 總數	percent Total 總%
Taipei County & City*** 台北縣市		4.20				
Ilan County 宜蘭縣	3.44	79	40	44	163	5.06
Taoyuan County 桃園縣	5.48	231	94	94	419	13.02
Hsinchu County & City 新竹縣市	4.58	44	40	0	84	2.61
Miaoli County 苗栗縣	5.32	80	40	48	168	5.22
Taichung County & City 台中縣市	9.57	134	52	92	278	8.64
Changhwa County 彰化縣	12.72	154	52	51	257	7.98
Nantou County 南投縣	5.95	76	0	0	76	2.36
Yunlin County 雲林縣	10.30	54	156	186	396	12.30
Chiayi County & City 嘉義縣市	6.80	0	0	84	84	2.61
Tainan County & City 台南縣市	10.20	120	165	69	354	11.00
Kaohsiung County & City 高雄縣市	7.40	45	44	90	179	5.56
Pingtung County 屏東縣	8.24	177	118	163	458	14.23
Taitung County 台東縣	2.54	47	35	35	117	3.63
Hualien County 花蓮縣	2.29	76	33	77	186	5.78
Penghu County*** 澎湖縣	0.86				0	
Keelung City 基隆市	0.11				0	
Total 總計	100.00	1.317	869	1.033	3.219	100.00

Source: Farm population data came from the Taiwan Agricultural Yearbook,1988 Edition. P.294. The V-A enrollment data came from reports from the schools.

資料來自台灣農業報(77年)及各農校

* Percent Farm Population represents of total should be read: The farm population of Taipei County and City is 4.20% of the total farm population of Taiwan.

**Production Agriculture includes Farm Management. Agronomy. and Horticulture.

農業生產(農產)包括農場經營，農藝及園藝

***These areas were not included in the 1989 study.

The six schools which had only vocational agriculture curricula had land areas ranging from slightly more than 7 hectares at Kwansi V-A School to nearly 130 hectares at Hualien V-A School. The amount and kind of land available for educational purposes (student practice, student projects, and demonstrations) appears to be too limited at more than one-half of the schools. Tillable land is a scarce resource in Taiwan and therefore,long-range planning is essential for making adequate amounts of land available at the sites where vocational agricuiture is taught. This is especially true for schools with any of six of the curricula: Farm Management, Horticulture, Agricultural Machinery, Forestry, Sericulture, and Animal Husbandry and Veterinary. The other two agricultural curricula may require less land: Agricuitural Civil Engineering and Food Processing.

Agricultural Machinery and Equipment

Several of the curricula require agricultural machinery and other equipment for the instruction of students. The Agricultural Machinery, Farm Management, and Horticulture curricula require various kinds of tools, equipment,machinery and laboratories for helping students develop competencies essential for entering and advancing in the occupations associated with the curricula. Other curricula such as Animal Husbandry and Veterinary and Forestry require equipment,some of which is the same or similar to farm power and machinery. According to the reports from the schools (see Table 13) most of the equipment was useable (included "New"plus "Useable") but some schools reported equipment which was "Obsolete."

學校設施包括土地，家畜，農業機械，食品加工設備及其他如教職員及學生宿舍，教室行政管理廳舍等。

校 地

學校土地提供學生實習及示範操作，對農業職校之教學至關重要，以23所學校提供之數據，自4.4至191公頃平均爲27.5公頃其中約百分之40用於校園及房舍建築，有三校用於校園，房舍者超過百分之90，實習用地至爲狹小(參閱附錄表D)

祇設有農科之六所農校，擁有之校地自關西農校約略超過7公頃至花蓮農校之將近130公頃，六校中半數以上提供學生實習示範操作等用之土地均極感缺乏，農校教學有足夠之可耕地至爲重要，在農業教育長期發展上應有妥善解決之道，此點對農場經營，園藝、農業機械，森林、蠶絲及畜牧獸醫等六科尤感需要，農業土木科，食品加工科對農地之需求性則較小。

農業機械與設備

農校中多種科別需要藉助農業機械及其他設備以輔助教學。農業機械，農場經營及園藝等科別需要各種不同之工具，設備，機械，實驗器材等以深化教學期使學生將來能獲得充分之工作能力。畜牧獸醫科，森林科之情形亦大致相同，根據各校提供之資料(見表13)多數學校之設備均堪使用(包括"新"及"堪用")少數學校情況較差。

Table 13. Agricultural Machinery and Equipment for Instruction.
表十三. 教學用農業機械設備

Kind 種類	Number Schools 擁有之校數	Quantity 數量	Condition 情況 New 新	Useable 堪用	Obsolete 損壞	Pecent Useable* 破損百分率
Tractors 曳引機	21	88	6	72	10	88.64
Power Tillers 耕耘機	23	133	8	120	5	96.24
Ricw Tuansplanter 插秧機	20	100	7	82	11	89.00
Rice Cutters 刈稻機	12	99	4	76	19	80.81
Rice Threshers 脫穀機	10	21	0	19	2	90.48
Rice Combines 聯合收獲機	14	88	3	76	9	89.77
Spray Equipment *噴灑設備	21	161	8	149	4	97.52
Electric welders 電焊機	16	133	0	131	2	98.50
Gas Welders 氣焊機	15	80	1	79	0	100.00
Drying Machines 乾燥機	4	17	0	11	6	64.71
Faum Tools 農場用具	1	34	0	34	0	100.00
Other 其他	7	32	0	32	0	100.00

Source: Reports collected from schools during February-March 1989.
資料來源：各農校78年提供之資料
*(New + Useable)/Quantity x 100
(新 + 堪用)/數量 × 100

Food Processing Equipment

Food processing is an important part of the agricultural products chain from producer to consumer. During recent years the food processing industry has made many changes including the adoption of very modern processes for processing and packaging of the products for both the domestic and international markets. In turn the schools have continued their curricrlum for preparing youth for the food processing industry.In 1989 there were twenty schools which offered the Food Processing curriculum. In 1975 there were 24 schools with students enrolled in Food Processing,but the number of students had increased from 2506 in 1974-75 to 4204 in 1989.

In order to provide laboratory experiences for the students,the schools should

have equipment for canning,dehydration,fermentation,and freezing. Although all of the 20 schools reported dehydration equipment, only 15 of the 20 reported having fermentation and freezing equipmnt. In general, the condition of the equipment was reported as "satisfactory" as shown below in Table 14.

食品加工設備

食品加工爲農產品自生產者到達消費者中間之一重要環節，近年來食品加工工業有長足之進步，包括食品製造與包裝之技術以適應國內外之需要。各農校亦本既往繼續培育此類人才以應食品工業之需。民國78年有二十所學校設有食品加工科，64年時有24校，入學人數則自64年之2506人增至78年之4204人。

爲使學生有充分之操作經驗，學校應設置製罐、脫水、發酵及冷凍等設備。20所學校中根據資料均有脫水設備，15所學校稱具有發酵及冷凍設備，一般言，各校之食品加工設備尚稱充足，見表14。

Table 14. Equipment for Food Processing Instruction.
表十四. 食 品 加 工 設 備

Kind of Eguipment 設備種類	Number of Schools 擁有之校數	No. & Gen. Condition 數量及情況	
		Satisfactory 滿 意	Unsatisfactory 不滿意
Canning 製罐	19	13	6
Dehydration 脫水	20	15	5
Fermentation 發酵	15	15	0
Freezing 冷凍	15	15	0

Source: Reports received from the schools during February-March 1989.
資料: 78年各校提供資料

Livestock and Poultry

Eighteen schools had the Animal Husbandry and Veterinary curriculum which requires livestock and poultry as part of the laboratory practice. In addition, 15 schools had the Farm Management curriculum which includes some work with livestock. The schools were asked to report on the number of head of various kinds of livestock and poultry; and to indicate their condition as well as their sufficiency. The quantity of livestock and poultry reported is shown below:

家畜與家禽

十八所學校設有畜牧獸醫科，需要畜畜飼養場以供學生實習，此外，十五所學校設有農場經營科，亦需若干畜畜飼養設施，本次研究曾作數量及運作情形之調查，結果如下：

	No.Sch.校數	No.Head頭數
Cattle牛		
Dairy乳牛	15	96
Beef肉牛	7	41
Water Buffalo水牛	2	4
Swine豬		
Sows母豬	17	129
Feeders種豬	13	528
Piglets小豬	11	327
Poultry禽類		
Chickens雞	15	9,019
Ducks鴨	5	162
Rabbitts兔	8	112
Geese鵝	6	37
Turkeys火雞	2	12
Other其他		
Sheep綿羊	4	20
Deer鹿	2	8
Peacocks孔雀	1	30
Goats山羊	1	7
Dogs狗	1	10

The amount of livestock and poultry available seems to be minimal at most schools for the instruction of more than 2800 students in Farm Management and 2500 students in Animal Husbandry and Veterinary. The poultry and livestock provide the teachers an opportunity to demonstrate good practice as well as provide the students with an opportunity to learn both principles and practices from hands-on activities.

Observations made at several of the schools seemed to indicate some improvement in the management practices at the schools, when compared to the conditions observed in 1975. However, it still appeared that the livestock and poultry facilities, equipment and care were treated with a lower priority than for the crops and vegetables. This observation was somewhat surprising in view of the importance of swine, poultry and even dairy cows to the economy of Taiwan.

Most of the schools did not comment on the sufficiency or the condition of the

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livestock and poultry which they reported. Some did indicate "enough", "good", "not enough", or "bad". One school indicated that the poultry and livestock which belonged to 4-H members was not included in the reported numbers.

家禽與家畜能提供教師示範及學生實習操作之機會以印証學習之理論，多數學校擁有之禽畜數量對2500名畜牧獸醫科及2800餘名農場經營科學生言，實屬有限。

就實地造訪部分學校所見，其一般管理情形較民國64年所見者有若干進步，但對禽畜方面之加强似落於對作物方面之後，鑒於畜牧事業對台灣經濟發展之重要性，對此頗感訝異。

多數學校未曾表明對畜牧方面設施之滿意程度，某校聲稱屬四健會會員飼養之禽畜未列入報表中。

Faculty Residences

All of the schools have residences for some of their faculty. The number and condition of the residences varies considerably from school to school. The average number of residences per school was reported to be about 20 with a range from two to 58; and three out of every four residences were reported to be in "bad" condition, as shown in Table 15.

Student Dormitories

Nineteen of the 24 schools reported having some dormitories for students; 15 reported they had dormitories for both boys and girls; three reported dormitories for boys only; and one reported a dormitory for only girls. The spaces for boys ranged from 40 to 380 pings with an average of about 120 pings. The spaces for girls ranged from 25 to 200 pings with and average of about 100 pings. The condition for most of the dormitory spaces was reported to be "Excellent" or "Good," as shown in Table 15.

Classrooms

The schools reported that about one-third of the classrooms were in "poor" condition. They reported a total of 802 classrooms with about one-third as "excellent." The number of classrooms at each school varied from a low of 15 at Jenai V-A school to a high of 51 at Taoyuan VA&I school as shown in Table 16.

Administrative Space

According to the reports from the schools there were nearly 300 rooms assigned

to administrative affairs with only one room at Chisan VA&I School and 26 rooms at Yuanlin VA&I School. Most of the schools reported that the space for administrative functions was sufficient, however eight indicated that more space was needed. The condition of the space was reported to be less than desired by nearly one-half of the schools. The reports clearly indicated a situation with much variation from school to school, as shown in Table 16.

教職員宿舍

所有學校均對其教職員提供宿舍，但其户數及品質則差別甚大，平均每校擁有20户。其幅度爲二户至58户，其中約四分之三之品質據稱"不良"，見表15.

學生宿舍

24所學校中有十九所供應學生部分宿舍；15所學校對男女生均供應宿舍；三所僅供應男生宿舍；一所僅供應女生宿舍，男生宿舍面積自40至380坪，平均約120坪，女生宿舍面積自25至200坪，平均約100坪，多數學校對其宿舍情況感表滿意，見表15.

教 室

有數達三分之一之學校聲稱教室之情況"不良"，另有達總數802間之三分之一之數其情況"甚佳"，各校教室間數自仁愛農校之15間至桃園農工之51間，見表16.

行政廳舍

依據各校填報之資料，各校總共擁有約300間行政廳舍，其中旗山農工爲一行政大樓，員林農工則分設26間，多數學校稱行政廳舍足數使用,八所學校表示需再增添，半數學校稱辦公處所之設備欠缺，由資料顯示各校之供需情形有甚大之差異，見表16.

Farmer Education and Community Service
農民教育與社區服務

One of the objectives of Taiwan vocational education in agriculture has long been to establish the vocational agriculture school as a center of education in the rural community. For many years the schools have worked with the Extension units of the Farmer Associations to provide instruction to farmers. The faculty and facilities at the schools are appropriate for much insturction to help farmers keep up-to-date with new technology and to understand the science which undergirds that technology.

Table 15. Faculty Residences and Student Dormitories at Schools with Vocational Agriculture Programs, 1989.
表十五. 農校教職員及學生宿舍(78年)

School 學校	Faculty Residences 教職員宿舍				Student Dormitories 學生宿舍								
		Condition 情況			Land	Boys 男生				Girls 女生			
	Qty 數量	Excl 良	Good 可	Bad 差	Area* 面積	Spaces 面積	Excl 良	Good 可	Bad 差	Space 面積	Excl 良	Good 可	Bad 差
Ilan VA&I宜蘭農工	21	8	12	1									
Taoyuan VA&I桃園農工	58			58	8,100.89	200	x			200	x		
Miaoli VA&I苗栗農工	26	4	15	7	1,210.44	72	x			72	x		
Hualien V-A花蓮農校	57		6	51	1.941.35	140			x	68	x		
Taichung V-A台中農校	34		8	26	1.505.00	1084**				412**			
Yuanlin VA&I員林農工	30			30	4.601.00	100		x					
Tainan V-A台南農校	24			24	1.057.50	150	x			85	x		
Taitung VA&I台東農工	32			32		200				160	911.03*		264*
Lungtan VA&I龍潭農工	3			3									
Kwansi V-A關西農校	5		5		479.60	40			x	25			x
Tahu VA&I大湖農工	13	7		6	1.043.67								
Wufeng VA&I霧峰農工	2			2									
Huwei VA&I虎尾農工	20		2	18	798.26	80		x					
Hsilo VA&I西螺農工	25		18	7	825.84	100		x		100		x	
Peikang VA&I北港農工	5		4	1	445.84	58		57	1				
Tungshih VA&I東石農工	39		13	26									
Minghsiung Acad民雄高中	10			10									
Tsenwen VA&I曾文農工		13	1	8	4	710.00	48			x	88		x
Peimen VA&I北門農工	4			4	1,116.00	40	x			48			
Chisan VA&I旗山農工	8	1	5	2	917.65					96	x		
Kangshan VA&I岡山農工		16			16								
Chiatung V-A佳冬農校	7		3	4	1.215.62	48				78			
Neipu VA&I內埔農工	13	1	2	10		250**	x			200**	x		
Jenai V-A仁愛農校	9			9	2,405.42	380	x			190			
Total總計	474	22		351	28,374.08	1656				1210			
Average平均	19.8		101		1773.38	118.29				100.83			

Source資料來源: Reports from the shcools.各校填報
*Square meters平方米. **Number of Ping坪數. One ping = 6' × 6 = 36 square feet.

Table 16. Quantity and Condition of Classrooms and Administrative Space at Schools with Vocational Agriculture Programs, 1989.
表十六. 農校教室及辦公廳舍數量、情況及面積

School 學校	Classrooms教室				Administrative Space辦公廳舍面積					
		Condition(No.Rms)情況(教室數)				Sufficient數用		Condition (% of Space)情況		
	Qty. 數量	Excel 良	Good 可	Poor 差	Qty. 數量	Yes 是	No 否	Excel 良	Good 可	Poor 差
Ilan VA&I宜蘭農工	45	44	1		24	x		100.00		
Taoyuan VA&I桃園農工	51	23	11	17	12	x		100.00		
Miaoli VA&I苗栗農工	47	47			13		x	10.00	50.00	40.00
Hualien V-A花蓮農校	30	30			16	x		100.00		
Taichung V-A台中農校	32	5	15	12	20			45.00	10.00	25.00
Yuanlin VA&I員林農工	35	17	12	6	26	x		81.00	12.00	7.00
Tainan V-A台南農校	41				10	x		100.00		
Taitung VA&I台東農工	40			40	14		x			100.00
Lungtan VA&I龍潭農工	24			24	4					
Kwansi V-A關西農校	17		17		7	x			100.00	
Tahu VA&I大湖農工	30	30			14			100.00		
Wufeng VA&I霧峰農工	16			16	11	x				100.00
Huwei VA&I虎尾農工	32		22	10	8		x			100.00
Hsilo VA&I西螺農工	44		44		9		x			100.00
Peikang VA&I北港農工	24	14	10		12	x		42.00	58.00	
Tungshih VA&I東石農工	32		18	14	10		x		40.00	60.00
Minghsiung Acad民雄高中	30	10	10	10	10	x				100.00
Tsenwen VA&I曾文農工	41	3	21	17	20		x		70.00	30.00
Peimen VA&I北門農工	28	13	10	5	8	x		37.50	62.50	
Chisan VA&I旗山農工	39		10	29	1		x	100.00		
Kangshan VA&I岡山農工	46			46	12	x		100.00		
Chiatung V-A佳冬農校	33	10	10	13	8	x			100.00	
Neipu VA&I內埔農工	30	21	9		16	x		100.00		
Jenai V-A仁愛農校	15	15			2		x	100.00		
Total總數	802	282	220	259	287					
Average平均	33.42				11.96					
Maximum最大	51				26					
Minimum最小	15				1					

Source: Reports from the schools. All information was based on self-aassessment.
資料來源：學校報表，各項說明均基於自我認定

The schools were asked to provide information about the farmer education and community service which they had conducted during 1986-87 and 1987-88. Based on the reports, as shown in Table 17, nearly 9000 persons were served through classes and special workshops conducted by 20 of the schools. Perhaps one of the most significant points from that information is in terms of the kind of classes, or the subject areas of the classes. Most of the classes were centered around agricultural power and machinery. More than 200 out of the 231 classes reported were concerned with agricultural machinery, power, and equipment.

Perhaps equally important is the finding that relatively few of the classes were focused on some of the other major problem areas for agriculture such as agricultual waste management, proper application and use of agricultual chemicals, environmental problems, and rural health.

長久以來，台灣農職教育目標之一即是建立農校爲當地農民教育與訓練中心，多年來農校教師與各級農會之推廣單位協同從事農民之教育工作，利用各種設備對農民作專業新知之講授，以加强其工藝之基礎。

根據各校所填報75及76學年度該校從事之農民教育與社區服務之資料，見表17.顯示在20所農校中接受課堂講授及參加專業性研討會之農民總計約9000人。堪注意者應是講授之內容，資料顯示，講授多集中於農業動力與機械方面，在231個班次中，涉及此一領域者超過200班。

另一重要之事，即有少數班次講授農業上若干待決之課題，如農業廢棄物處理，農業藥劑之使用，環境保護及鄉村衛生等。

Technical Agriculture Programs
農業專科教育

In 1989 there were two institutes which provided agricultural technology programs: National Pingtung Institute of Agriculture and National Chiayi Insitute of Agriculture. The Chiayi Institute was located in Chiayi County in the south central area of Taiwan and the Pingtung Institute was in Pingtung County, the southernmost county in Taiwan. A third institute had recently been established at Ilan in the northeast part of Taiwan. It was to be the National Ilan Institute of Agriculture and Industry; and was being developed by converting the Vocational Agriculture and Industry senior vocational school. Plans, as reported, were to enroll the first classes into the Institute in the 1989-90 academic year. (Meanwhile the second and third year students in the vocational programs were to complete their studies as scheduled.)

Table 17. Farmer Education and Rural Service by Schools with Vocational Agriculture Programs, 1986-87 and 1987-88.
表十七. 農校之農民教育及農村服務75～76年

Kind of Education/Service 教育服務之類別	Number 數量		
	Schools 學校	Classes 班次	Participants 人數
Tractor Driving 曳引機駕駛	4	8	253
Tractor Operation and Repair 曳引機操作及修理	2	5	90
Tractor & Truck Repair 曳引機及卡車修理	1	8	250
Truck Operation & Maintenance 卡車操作及維護	1	8	250
Rice Transplanter 插秧機	4	14	443
Cultivator Operation & Repair 耕耘機操作及修理	1	1	27
Rice Drier Operation & Maintenance 稻穀烘乾機操作及維護	2	4	123
Farm Machinery 農業機械	8	115	3,934
Farm Engines Operation & Repair 農用引擎操作及修理	6	33	1,648
Sprayer Operation & Maintenance 噴霧器操作及維護	3	6	179
Swine Waste Treatment 豬舍廢棄物處理	1	1	50
Fruit Trees 果樹	1	5	146
Flowers 花卉	1	4	120
Agricultural Speech Training 演講術	1	23	1,181
Home Economics/Food Processing 家政/食品加工	2	3	550
Social Youth Training (Food Proc., Horticulture, Mgmt) 社青訓練(食品加工，園藝，家政)	1	6	NA**
Total 總計	20*	231	8,901

Source: Reports collected from the schools during February-March,1989.
資料來源：78年春獲自各校
*Reports from 20 schools which indicated they conducted such programs.
20所學校之資料
**Not available. 不詳

The technical agriculture programs provide an essential level of instruction for technically trained persons for in the production, processing, and marketing of agricultural products. In the development process, as countries move from the labor intensive stage into the technology intensive stage, the demand for technicians usually increases. And Taiwan has moved into the technology intensive stage for manufacturing and, for many phases of the agricultural sector.

國立屏東農業專科學校及國立嘉義農業專科學校爲至民國78年時已設立之兩所農業類專校，前者位於台灣之最南端，後者位於中南部。處於東北部之宜蘭農工職業學校亦將改制爲農工專科學校，行將於79學年度招收第一屆學生入學。

農業專科教育旨在培育技術性人才從事農作物之生產,調理及銷售,當經濟發展自勞力密集進入技術密集之階段，技術人才之需求必將隨之增加，台灣在製造業及若干農業生產部門殆已進入技術密集之階段。

During the past 40 years in Taiwan there has been a very significant increase in the technical level programs in support of the industrial and agricultural development. In 1950 there were only four junior colleges; by 1960 there were 12, in 1970, 70 and by 1986-87 there were 77. Most of these junior colleges, or techincal institutes, were private (56) with close ties to the industries and businesses for which their graduates were being prepared. The number of graduates from all of the technical programs increased in the same dramatic way, from about 500 in 1950-51 to over 54,000 in 1985-86 as shown in Table 18.

Table 18. Number of Junior Colleges and Graduates for Selected Years.
表十八. 在選定之若干年度專科學校數及畢業生數

Years 年度	No. Institutions 專校數		No.Graduates畢業生數		
	Total 總計	Private 私立	Total 總計	Private 私立	% Private 私立
1950-51(40年)	3	1	523	0	0.00
1960-61(50年)	12	6	1,413	423	29.94
1970-71(60年)	70	50	19,114	13,615	71.23
1980-81(70年)	77	56	38,370	29,346	76.48
1986-87(76年)	77	56	54,661	40,675	74.41

Source: Educational Statistics of the Republic of China, 1987. Ministry of Education, pp. 5-7 and 22-25.
資料來源：中華民國教育統計 教育部 民國76年

In this study the review of the technical agriculture programs has been quite limited. A much more intensive review is warranted due to the importance of the educational programs. This review has looked only briefly at the overall curricula offered, the enrollments in the programs, and the attainments of the graduates as they entered the labor force.

過去四十年來台灣在技術水平上有顯著之增進以支持農業及工業之發展。民國39年專科學校僅有四所，49年時有12所，59年，70所，至75年時達77所。其中56所爲私人設立，造就畢業生支持工、商業之發展，畢業生人數亦有驚人之增加，自39年時之約500人躍增至74年之超越54000人，見表18.

本次研究論及農業專科教育者爲數甚少，由於農專教育之重要性，深度之研究洵屬重要，本研究僅對科別之設置，學生就學，畢業生就業等方面作一初步之探討。

The Programs
學 制

The two Institutes each have some distinctive characteristics for their programs. Both Institutes offer what are termed Regular and Evening programs. The Regular programs are for full-time students while the Evening programs are designed for part-time students and require one additional year for completion.

The Pingtung Institite offered the regular and evening three-year programs for students. The three-year program was quite similar to a four- year technical baccalaureate degree[2] program. Students were accepted into the various curricula based on competetive entrance examinations. Those entrance examinaticns were given as part of combined examinations for entrance into all junior colleges. The examinations for entrance into the Evening programs were also given as part of combined examinations with other junior colleges but at a date later than for the regular programs.

The National Chiayi Institute of Agriculture had a regular five-year and two-year program, and an evening two-year program. The students in the five-year program entered by examination after completing the junior middle school program. The five-year program combines the senior vocational school level program with an additional two years. However, the students do not compete in another examination at the end of third year.

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[2] In 1989 a proposal had been put forward to the Ministry of Education to change the instutute to a baccalaureate-degree granting institution.
民國78年曾向教育部申請改制爲授予學位之農學院

The two-year program students are graduates from senior level academic or vocational schools who compete in entrance examinations for places in the Instute. The Regular two-year students competed in an examination for two-year programs in industry, commerce, and other areas as well as agriculture. The Evening two-year students competed in a similar combined examination at a later date.

The students in the technical institutes are admitted to particular departments (or majors) and each department has its required curricula. The students generally follow the same pattern of courses, always taking courses along with the other students in their same class. The Evening students and the Regular students may take the same courses but take the courses at different times.

兩所農業專科學校各設有若干具有特色之科別以推行其教學計畫。除日間部外均設有夜間部，前者實施全日制正規教學，夜間部教學時限則延長一年。

屏東農專設有三年制日間部及夜間部，三年制教學與四年制授予學士學位者頗相似，學生入學前須通過聯合招生考試方能進入志願就讀之科別。夜間部者入學方式相同，惟考試時間延後。

嘉義農專日間部設有五年制及二年制，夜間部設有二年制，國中畢業生可經考試進入五年制就讀，此一學制乃結合三年高農續讀兩年，毋須再經考試。

二年制招收高級中學或高級農校畢業生經聯合招生方式入學，夜間部者方式相同，惟考試時間延後。

專科學校之學生依進入科別之不同，必須修讀該科指定之若干必修科目，全班共同上課，同科夜間部者必修科目相同惟在晚間上課。

Curricula
科　別

The curricula at the Institutes have been developed in response to identified needs for technically trained manpower. Both institutes have published their curricula and course requirements[15]in English and Chinese. One of the strengths of the technical institutes is the flexiblity which they have to develop curricula and courses in response to idendified needs. The process for change is less bureaucratic than for any of the other levels of education.

The curricula and enrollments in each, for both the regular and evening programs, are shown in Table 19. The enrollment of more than 6,800 students at the two

institutes was in 21 different curricula. The two curricula with the largest enrollments were Food Processing and Animal Husbandry; and more than one-half of the enrollment was in six curricula:

兩所專科學校所設科別之種類乃以人力需求之類別而設計，兩校均有以中、英文編輯之科別與課程之專輯出版。農專對科別及課程之調整以適應時代之需求有甚大之彈性，其程序在各教育階層中所受之限制較少。

日、夜間部科別種類及入學人數見表19，兩所農專綜計有21種科別，就學人數達6,800餘名。學生人數最多之兩種科別爲食品加工科及畜牧科，超過半數之學生就讀於下列六種科別：

Agricultural Economics 農業經濟	629	Food Processing 食品加工	771
Agronomy 農藝	618	Forestry 森林	505
Animal Husbandry 畜牧	704	Horticulture 園藝	652

Enrollment
入學學生

The enrollment was mainly male with approximately two-thirds male and one-third female. The female enrollment was concentrated in four curricula: Agricultural Economics (333), Food Processing (399), Horticulture(288), and Home Economics (339), as shown in Table 19. However, if the enrollment is reviewed in terms of the regular and evening enrollments, it is quite clear that the concentration of females is much more pronounced in the evening progams as shown below.

入學學生以男生居多，約占三分之二，女生約三分之一，多集中於下列四科：農業經濟(333)，食品加工(399)，園藝(288)及農村家政(339)，見表19，如以日夜間部區分入學學生，則明確顯示女生多集中於中於夜間部如下所示：

Female Enrollment in Agricultural Institutes
就讀農專之女生

Length of Program 制別	Kind of Program 類別			
	Regular 日間部		Evening 夜間部	
	Females 女生	Percent 百分比	Females 女生	Percent 百分比
5-Year 五年制	851	37.13	---	-----
2-Year 二年制	216	28.76	491	50.36
3-Year 三年制	307	14.10	515	80.34
Total 總計	1,374	26.32	1,016	62.87

Table 19. Enrollment by Curricula and Kind of Program at Chiayi and Pingtung Agricultural Institutes, 1988-89.
表十九. 嘉義與屏東農專所設科別及入學人數

Curriculum 科別	Number of Students 學生人數												TOTAL 總計
	Chiayi Institute 嘉專						Pingtung Institute 屏專				Total 合計		
	5-Yr. Reg 五年制日間		2-Yr. Reg 二年制日間		2-Yr. Eve 二年制夜間		3-Yr. Reg 三年制日間		3Yr . Eve 三年制夜間				
	M(男)	F(女)	M(男)	F(女)	M(男)	F(女)	M(男)	F(女)	M(男)	F(女)	M(男)	F(女)	
Agronomy 農藝	149	75			72	60	94	21	42	105	357	261	618
Agricultural Chemistry 農業化學							117	13			117	13	130
Agricultural Economics 農業經濟	98	154			30	180	116	5	52	66	296	333	629
Agricultural Management 農業經營			87	17	10	34					97	51	148
Farm Management 農場經營			64	38							64	38	102
Animal Husbandry 畜牧	30	16	145	11			213	32			388	59	447
Veterinary 獸醫	224	69			115	38	240	18			579	125	704
Agricultural Engieering 農業工程							103	0			103	0	103
Farm Machinery 農業機械	219	7	90	0	70	4					379	11	398
Farm Mechanics 農業機械							122	2			122	2	124
Farm Hydraulics 農田水利	139	65			56	7					222	72	294
Food Processing 食品加工	139	107	31	89	31	102	139	10	32	91	372	399	771
Forestry 森林	115	105	79	3	42	54	77	30			313	192	505
Forestry Management 森林經理	136	79									136	79	215
Forestry Products 林產利用							90	8			90	8	98
Horticulture 園藝	131	119	39	58	58	84	136	27			364	288	652
Soil and Water Conservation 水土保持							93	3			93	3	96
Plant Protection 植物保護							92	35			126	90	216
Mechanical Land Reclamation 機械墾殖							103	3			103	3	106
Aquaculture 養殖							136	14			136	14	150
Home Economics 家政							0	86	0	253	0	253	339
TOTAL	1441	851	535	216	484	491	1871	307	126	515	4457	2300	6837

Source: Data collected from the Insitutes during February-April 1989.
資料來源：七十八年二～四月自兩校蒐集

Graduates
畢業生

The graduates from the technical agriculture programs represent a significant significant part of the total postsecondary graduates in agricultural curricula in Taiwan. In 1985-86 there were a total of nearly 3,000 graduates from the agriculture, foresty and fishery curricula in postsecondary institutions. These were from the two-year curricula, regular and evening, through the doctoral programs as shown below.

農業專科學校畢業生在台灣大專院校畢業生之農業類別中有舉足輕重份量，民國74年約有3000名大專畢業生來自農業、森林及漁業，包括專科及各級學位之日、夜間部者，爲下所示：

	Agr/For/Fish 農/林/漁	Total 總數	Ag%Total 農科百分比
Diploma: 專科	1,723	54,661	3.15
2-Yr Regular (248) 二年制 日間部			
Evening (307) 夜間部			
3-Yr Regular (499) 三年制日間部			
Evening (137) 夜間部			
5-Yr Regular (532) 五年制 日間部			
Baccaulaureate 學士	969	38,567	3.51
Masters 碩士	242	3,795	6.38
Doctoral 博士	10	163	6.13
TOTAL 總數	2,944	97,186	3.03

Even though the diploma, or technical institute, level graduates represented nearly three out of every five postsecondary graduates in the agriculture, forestry, and fishery fields, they were but a small proportion of the total postsecondary graduates. Perhaps one of the significant points to be observed was that even though agriculture's share in the GDP had dropped from about 35% in 1952 to 6.9% in 1985, there was still a certain level of priority given to the development of human resources for the agricultural sector.[16]

雖然專科畢業生在農、林、漁等科類中爲數達五分之三，但在總數中所占比率仍低，由此或可認定即令農業在國民生產毛額所占之比率自民國41

年之35%降至74年之6.9%，但在農業領域之人力資源開發上仍有相當程度之投入。

Research and Extension
研究與推廣

The faculty at agricultural institutes should have a close affiliation with the industry which they are serving. One of the features of technical education is the need to be constantly updated to keep pace with changes in technology coming from research and the application of that technology in the market place: on farms, in processing, in business and industry, and in policies for support of agricultural programs. The relationship between the institutes and industry is a "two-way street." The faculty from the institutes may provide technical assisrtance to the industry but at the same time the faculty have an opportunity to learn from the applications of technology which the successful industries have made.

The faculty at the institutes in Taiwan are involved with research projects and with extension activities in addition to their major responsibilities for teaching. These kind of activities are critical for helping the faculty keep up-to -date with new and emerging technology, and for keeping aware of the problems and needs of the industry.

The faculties at the institutes constitute a major resource when one considers the scope of that resource. For example, at the National Pingtung Institute of Agriculture and the National Chiayi Institute of Agriculture there was a total of more that 800 full-time and part-time faculty. About five out of every eight were full-time faculty.

農業專科學校教師應與其相關之企業界有密切之聯繫，技術教育要求之一即是能與來自科研成果之技術創新同步前進，並能在該項新技術之市場、農場、工廠、及企業計畫之推行以支持農業發展上予以實踐。學校與企業界之間爲一"雙行道"之關係，學校教師對企業界應能予以技術上之協助，并亦能自有成就之企業界學習技術上之運作。

農業教師除以教學爲主之工作外，尚須從事研究及推廣工作，此等工作能使教師之知識與技術與時俱進，并瞭解當前企業界所面臨之困難及其需要。

當思及尋求有識之士，專科學校教師將爲主要供應之源，屏東及嘉義兩所農專共有專任及兼任教師800餘人，專任者超過半數。

Extension

The teaching role for the agricultural technical institutes includes the nonformal extension activities in addition to the formal instruction in the regular and evening programs. At the National Pingtung Institute of Agriculture (NPIA) an Agricultural Extension Committee was established in July 1976. In September 1981 the original committee was reorganized and structured to fit an "Extension Professor System" with special support from the Ministry of Education and the Council of Agriculture (then the Conucil for Agriculcultural Planning and Development). According to the overall plan for Taiwan, NPIA provides extension services to farmers and others in four counties: Kaohsiung, Pingtung, Taitung and Penghu.

The extension program at the National Chiayi Institute of Agriculture (NCIA) was organized quite similarlarly to the system at Pingtung. They have six extension professors with part-time assignments for extension activities. Their work was reported to be supplemented by other professors who perform extension work upon demand. The NCIA provides extension services to farmers and others in three counties: Yunlin, Tainan (including Tainan City), and Chiayi.

推 廣

農業專科學校之教學工作除日、夜間部之正規教學外，尚包括非正規之推廣教育活動。屏東農專於民國65年成立農業推廣委員會，七十年九月由教育部及農委會資助改爲"推廣教授制"并將推廣業務擴及高雄、屏東、台東及澎湖四縣。

嘉義農專推廣體系之建立與屏專至爲相似，聘請六位推廣教授課餘兼及推廣業務，如有需要另請其他教授予以支援。嘉專推廣業務擴及雲林、台南(含台南市)及嘉義等三縣。

In general, the extension activities at each Institute are guided by the following principles:

1. Direct assistance to be provided by the extension professors or other faculty with special expertise to help farmers solve problems;

2. Provide extension training programs or faculty for teaching upon request by District Agricultural Improvement Stations, or Farmers Associations (Township or County);

3. Respond to questions or problems submitted mail or telephone by farmers;

4. Collect and prepare agricultual information (printed material and/or video tapes)

to be used for educational purposes; and

5. To have Extension Office at the Institute coordinate all of the extension activities for all units on campus to achieve maximum benefits for the farmers and for the faculty.

Each institute annually selects the subject areas to be emphasized in the extension program. For 1988-89 the areas of emphasis at the two institutes were as follows:

Technical assistance for plant protection
Diagnosis and treatment of livestock/poultry diseases
Guidance for individuals and groups on farm machinery service, repair and management
Assistance on horticulture crop production
Assistance on food processing (Chiayi)
Assistance on Agricultural marketing/agicultural economics (Chiayi)
Guidance on aquaculture techniques,and diagnosis and treatment of fish diseasea (Pingtung)

一般言，兩校之推廣活動依下列各原則爲導向：

1. 推廣教授或其他教授依專家之見解直接協助農民解決農事問題。
2. 循農改場或農會(縣級或鄉鎮級)之請舉辦推廣訓練班或由教授到場教學。
3. 回答農民經信函或電話提出有關農事之問題。
4. 蒐集并製備農業資訊材料(印刷品、錄影帶等)以作爲教學之用。
5. 推廣委員會協調全校各單位有關推廣之活動，期使校中教師及校外農民同感便利并獲需益。

兩校每年均擬訂推廣計畫之重點項目，如七十七學年度所訂定之項目爲：

植物保護技術之協助
禽畜疾病之診斷與治療
個人及團體關於農業機械之照顧、維修及管理之指導
園藝作物生產之協助
農產運銷/農業經濟之協助(嘉專)
養殖技術、魚病診斷及處理之指導(屏專)

For example, at NPIA, in 1988 the Extension Committee selected two villages in both Kaohsiung and Pingtung counties and initially gave at least two of the areas listed above as areas of special service. Through meetings with various commodity

groups and leaders in the local extension progams, the problems which were presented were analyzed and appropriate assistance provided by the related departments or extension professors. In addition, the Extension Committee offered various training sessions and workshops for the people in the villages.

Another example of the kind of extension services provided was reported regarding the cooperation of the institutes with other agencies. In the geographical area served by each institute,there is a District Agricultural Improvement Station (DAIS) and one or more Research Institutes. When the DAIS holds a special meeting for farmer representatives, the institute in the region along with the research institutes are invited to send representatives who provide technical information in response to farmer questions.

例如，七十七年屏東農專之農業推廣委員會於高雄及屏東縣選定兩村依上列項目至少舉出其中兩項作爲服務項目，經與各產品生產者，地方農會指導人等開會，對所發生之問題由與會之專業教授群分析，評估定出解決辦法，此外，推廣會並對村中農民舉辦各種研討會，訓練班。

推廣服務工作另一事例爲聯繫農專與其他機構之合作事項，依兩農專重定之服務地區內均有一農業改良場及若干試驗場所，當農改場邀請農民集會時，位於該區之農業專校及試驗所亦將派代表參加並就所討論之問題準備資料分送與會農民。

Both the Chiayi and Pingtung institute prepare and distribute annual reports regarding the extension activities. The reports appear to place emphasis on the process and the quantity. In other words, the reports provide information about the number of meetings held, the number or individual and group consultations, the number of responses to mailed, or telephoned questions, number of training workshops conducted number of times faculty served as special teachers or judges for events, etc. These data provide an overview of the extension process as shown below in a summary table from the Pingtung reports:

兩所農專均將當年有關推廣之活動輯成年度報告，此項報告著重推廣方法與次數，即開列開會之次數，參加諮商會之人次，以信函或電話回答問題之次數，召開研討會之次數，推廣教授臨場指導操作之次數等，類此總結性之推廣工作報告，列出屏東農專之部分資料以窺一斑：

	Activity 活　動	Year 年　度	Freq 次數	Faculty & Staff Invol 指導者人數	Farmers Benefitted 農民數
1.	Training	1987(76)	95	18	3800
	Workshops	1988(77)	127	27	5080
	訓練班	1989(78)	131	21	3960
2.	Consultation	1987(76)	8	17	460
	Meetings	1988(77)	10	23	555
	諮商會	1989(78)	8	15	490
3.	Direct	1987(76)	79	16	185
	Guidance	1988(77)	232	25	410
	直接輔導	1989(78)	251	20	306
4.	Mail	1987(76)	20	6	20
	Service	1988(77)	29	5	29
	信函服務	1989(78)	34	9	34
	TOTAL總計		1,024	202	15,329

Source: Translated from Annual Reports and provided by the President's Office, National Pingtung Institute of Agriculture
資料來源：屏東農專年度報告

Both institutes publish materials for use in meetings and for direct mail to their specialized mailing lists. For example, the NCIA in 1989 published several issues of an EXTENSION NEWSLETTER with approximately 2000 copies of each issue. They reported preparation of approximately 23,000 pieces of printed materials for educational purposes.

The extension function is relatively new to Institutes. It is a function which normally should be associated with the other functions of teaching and research as a means of having the most effective programs. The three functions, when effectively combined, provide the basis for a synergistic effect, an effect that makes each function better than it could have been without the presence of the other functions.

兩所農專均編印各種研習會及回問信函所準備之資料，屏東農專曾於78年出版推廣通訊若干期，每期約2000份，用於推廣教育之印刷品約達23,000份。

農業專科學校從事推廣工作爲一較新穎之作法，如欲發揮技術教育功能之極致除教學與研究工作外，必須結合推廣工作方能有以致之，三者互相配合，產生互補作用，其所呈現之功能，必較優於缺少其中任一種者。

CHAPTER IV
第四章

THE GRADUATES
畢業生

Vocational Agriculture Graduates
農校畢業生

The graduates from six of the 24 schools and from four of the nine agricultural curricula for the years 1981-82 and 1983-84 were studied. The reader is again cautioned to not generalize to the total population of graduates for those two years because of the relatively low rate of return, or responses, from the sample graduates. However, the data presented in this section does provide the reader with valuable information about the general characteristics of the respondents, their educational achievements after graduation from the V-A sohools, their occupational attainments including their participation in farming and their opinions about the vocational agricultural programs as they knew them. At several points in the presentation of data comparisons are made with information from previous studies. Information about the graduates, participation in farming is reported in the next chapter.

農校畢業生追縱研究之對象以六所農校，四種科別，70及72學年度畢業者爲限，讀者勿以該兩年度畢業生人數而遽獲概念，蓋因回函之樣本爲數不多，惟仍能藉此提供回函者之情況，如高農畢業後之就學、就業包括經營農事以及個人對農職教育之認知等，若干比對性質者均與前此研究之資料加以比較，畢業生經營農事之情況則列入下章。

Gender

Historically, most of the graduates from the V-A schools have been males. Only the Rural Home Economics curriculum has been for females. Howver, the enrollment of females in many of the traditionally male curricula has occurred since the early 70,s. Horticulture and Food Processing have been the primary examples. However, as indicated previously in this report, the presentday enrollment in several curricula is characterized by the presence of many females. The respondents from the 1982 and 1984 graduates reflect this trend. About 17 percent of the graduates from the four curricula were females, and about 14 percent of the respondents to the questionnaires from the 1982 and 1984 sample were female.

Parents Occupations

The information about the occupation of the parents of the graduates was secured from the official school records. Although the years of graduation represented by the respondents spanned more then 30 years, and the nature of the agriculture, industry and commerce changed much during that period, still it is quite clear that nearly 70 percent of the respondents had parents who were engaged in agriculture at the time the respondents entered V-A schools. (See Table 20) When compared with the presentday enrollment of students who have about 48 percent of their parents engaged in agricuiture, either one or both of two conditions exist: 1) the earlier enrollments came from a higher proportion of families engaged in agriculture, and/or 2) the repondents are not truly representative of their graduating classes.

性別

歷年來農校畢業生男生占多數，僅有農村家政科女生居多，民國六十年代初女生亦逐漸進入歷年來均以男生爲主之科別，園藝科及食品加工科可爲代表，一如本報告前所指出者，現今諸多科別均有衆多女生就讀，可由71及73年畢業生回覆之問卷顯示此一趨向，四科畢業生中有百分之17爲女生，該兩年度之樣本學生有百分之14爲女生。

家長職業

畢業生家長職業之資料來自各校檔案，畢業生就學年代迄今已跨越三十年，在此期間農、工、及商業均有鉅大之變化，但仍能清晰的看出當年進入農校之學生有百分之70其家長爲經營農事者，(表20)新近入學者，家長之職業有百分之48經營農事，由以上事相可說明：1)早期就讀農校之學生來自務農家庭之比率偏高，回函者不能眞實反映該班學生之狀況。

Table 20. Occupation of Respondents' Parents at Time of Enrolling in V-A School, by Year of Graduation.
表二十．回函者在農校就學時畢業當年家長之職業

Parent Occupation 家長職業	Year of Graduation 畢業年						Total總計	
	1950 (39)	1955 (44)	1959 (48)	1964 (53)	1969 (58)	1984&84 (71&73)	No. 人數	Percent 百分率
Agricvulture 農業	28	49	62	48	42	46	275	69-62
Industry 工業	0	1	2	5	6	5	19	4-81
Commerce 商業	5	12	4	6	4	6	37	9-37
Professional 專門行業	1	3	2	1	0	4	11	2-78
Government/Educ 公教人員	4	6	6	8	8	2	34	8-78
Military/Police 軍警	0	1	0	0	1	0	2	0-51
Miscellaneous 一般性	2	0	1	2	2	0	7	1-77
Other Non-Agr 其他非農業性	5	0	5	0	0	0	10	2-53
Total 總計	45	72	82	70	63	63	395	100-00

Note: The number of missing observations was 50.
註：未經觀察者爲50人。

Major in V-A School

All of the 1982 and 1984 respondents were from four majors: Farm Management, Agricultural Machinery, Animal Husbandry and Veterinary, and Horticulture. However, the graduates from the earlier years came from ten curricula as shown in Table 21. The preponderance of respondents, graduates prior to 1982 and 1984, were from three curricula: Animal Husbandry and Veterinary, Agronomy, and Farm Management (then Comprehensive Agriculture and Farm Business). The respondents from the 1969 graduation class included for the first time the relatively large group from the Food Processing curriculum. (Note. The reader should be aware that the original sampling was from all of the curricula in each of the schools and that the number of graduates from each curricular area were not the same. The Agronomy curriculum was the curriculum with the most classes and students based on perceived need for vocationally trained persons.)

高農就讀之科別

所有71及73年回函者均就讀於四種科別：農場經營、農業機械、畜牧獸醫及園藝，但早期畢業生來自十種科別，見表21。71及73年以前畢業之回函者主要來自三種科別：畜牧獸醫、農藝及農場經營(次爲綜合農業及農企業)，58年畢業之回函者，首次包括人數衆多之食品加工科（應提示者原始抽樣包括各個學校之每一科別，各科畢業人數自不相等，基於培訓就業人才之認知，農藝科之班級數及學生數最多)。

Table 21. Respondents' Major in V-A School by Year of Graduation.
表二十一、回函者畢業時就讀之科別

Major 科別	Year of Graduation畢業年						Total總計	
	1950 (39)	1955 (44)	1959 (48)	1964 (53)	1969 (58)	1982&84 (71&73)	No. 人數	Percent 百分率
Ani Husb & Vet. 畜醫	7	14	16	13	14	17	81	18.20
Agr. Machinery 農機	8	0	0	5	3	21	29	6.52
Farm Mgmt* 農場	4	8	19	28	15	25	99	22.25
Agronomy 農藝	40	38	39	15	6		138	31.01
Horticulture 園藝	3	5	2	2	1	14	27	6.07
Forestry 森林	2	7	7	4	5		25	5.62
Ag Civil Engr. 土木	4	1	0	2	3		10	2.25
Food Processing 加工	4	6	2	2	10		24	5.39
Sericulture 蠶絲	0	0	5	1	0		6	1.35
Rural Home Ec. 家政	0	0	0	0	6		6	1.35
Total 總計	64	79	90	72	63	77	445	100.00

Source: Data from school records. 資料來自各校檔案

* Prior to 1982-84 graduates, this major includes Comprehensive Agriulture, Farm Business, and Agricultural Extension.
71～73年以前之畢業生，主修科別當包括綜合農業，農企業及農業推廣

Schooling After High School

The 1982 and 1984 graduates were asked for information about their schooling after graduation from the V-A schools. They were asked to indicate college attendance, name of the school, whether graduated or still enrolled, their major, and the highest degree which they had achieved.

Out of the 77 respondents there were 16 (20.8%) who reported attendance at postsecondary instituions. Most of those had attened institutes or junior colleges (9)while three had attended universities; and 10 of the 16 reported they had graduated from the programs. Ten of the 16 indicated their fields of study were in agricultural curricula.

高農後之學業

71及73年畢業生曾詢問其高農畢業後之就學情形，包括就讀大專院校，院校名稱，是否已畢業或仍在就讀，系科別，所獲最高學位爲何等。

77年回函者中有16人(20.8%)稱曾就讀大專院校，其中就讀專科者最多(9)，有三人進入大學，16人中之10人稱已完成學業，並有10人稱所習者爲農業學科。

Employment of Graduates

The graduates were asked to provide information about their employment in terms of employer,kind of job, number of jobs, hours of employment per week, and job satisfaction.

Most of the graduates were employed. The newer graduates, the 1982 and 1984 graduates, reported about 64 percent with one job and 17 percent holding two jobs. A few were in the military (8%), some continuing in schooling (4%), and about 7 percent reported they were unemployed. However, the older graduates indicated about 72 percent with one job, 21 percent with two or more jobs, and four percent retired.

畢業生之就業

問卷中亦曾詢問畢業生之就業情形，包括雇主，職業類別，職業數，每周工作時數，對工作是否滿意等。

大多數之畢業生均已就業，71及73年新近之畢業生有百分之64具有一項職業，百分之17 擁有兩項職業，有少數服役於軍旅(8%)，若干尚在學校就

讀(4%)，約有百分之7聲稱無業，較早期之畢業生約有百分之72具有一項職業，百分之21具有兩項或兩項以上之職業，百分之4已退休。

The graduates were asked to provide information about the nature of their work and some information about their employers. The Government has encouraged development of the private sector during the past 40 years and one would expect that some of the graduates would be employed in the private sector, either self-employed or in business or industry. when asked to indicate the category of employer for their main job, the largest proportion of the younger graduates indicated "Private Orgnization" (37.7%) while most of the older graduates indicated their employer was "Government" (62.2%) as shown below.

對畢業生亦曾要求其說明工作性質，及有關雇主之情形，過去四十年政府曾鼓勵發展私營企業，由此當可想見若干畢業生將任職於私營機構，當詢問其主要職業雇主之身分時，大多數之年青畢業生均答"私人機構"(37.7%)，年紀較大之畢業生多表示其雇主爲"政府" (62.2%)，如下所示：

Employer for Main Job 主要職業之雇主	Older Grads 年長畢業生 (1969 or before)50年或更早 (n=368)		Recent Grads 新生畢業生 (1982 & 84)(71及73年) (n=77)	
	No.人數	%	No.人數	%
Self 自己	64	17.4	14	18.2
Private Org. 私人機構	31	8.4	29	37.7
Government 政府	229	62.2	16	20.8
Private Person 私人自營	28	7.6	12	15.6
No Response 未作業	16	4.3	6	7.8

The length of time employed by their present employer was closely related to the length of time since graduation from the V-A schools. Most of the older graduates (80%) reported having been employed for 9 or more years by their present employer; while the most recent graduates reported being employed by their present employer three years or less (70%).

被現雇主雇用時間之久暫與畢業後離校之久暫有密切關係。多數年長之畢業生(80%)稱被現雇主雇用已有九年或更久，而多數新近畢業者則稱被現雇主雇用三年或更短(70%)。

Time on the job. Most of the graduates reported that their work was full-time. Only five percent of the older graduates and 12 percnt of the most recent graduates indicated that the work was part-time. In general those data were similar to the data in their reports of the number of hours per week on the job. About 75 percent of the most recent graduates reported 31 or more hours per week; and 78 percent of the older gradues indicated 31 or more hours per week.

工作時間 多數畢業生稱其工作爲專業性，僅有百分之五之年長畢業生及百分之12新近畢業生稱其工作爲兼業性，此等數據與其報告中所稱每周工作時數相若。新近畢業生中約有百之75及百分之78之年長畢業生稱每周工作35小時或更多。

Job satisfaction. The graduates were asked to indicate the level of their satisfaction with their present employment. The most recent graduates were asked to indicate the extent to which they agreed or disagreed, on a four point scale, with the statement "You are well satisfied with your present job." The response categories were "Completely disagree," "Partially agree but mainly disagree," "Partially disagree but mainly agree," and "Completely agree." In general, the most recent graduates were more dissatisfed than satisfied with their jobs. About 45 percent tended to agree with the statemant and 55 percent tended to disagree. Those who were mainly or completely satisfied were mainly in the private sector (46%) in both agricultural (20%) and non-agricultural (26%) jobs.

The older graduates were quite satisfied with their jobs. About 50 percent were satisfied, 42 percent were neutral, and only 8 percent indicated they were dissatisfied. The question to which they responded was: "How satisfied are you with this job?" The categories for response were: "Very Satisfied," "Satisfied," "Neutral," "Dissatisfied," and "Very Dissatisfied." The highest level of satisfaction was expressed by those who were in agricultural positions in education (62%), followed closely by those in the public sector non-ag (59%), public sector ag (57%), and government ag (55%). The greatest amount of dissatisfaction was expressed by those in the private sector ag (20%). However, 24% of those in the private sector ag expressed satisfaction with their employment.

對工作滿意之程度 對畢業生曾要求其對現在從事之工作表示其滿意之程度，新近畢業者則對提問：「你對現在工作十分滿意」之四種同意程度："完全不同意"，"基本上不同意，但部分同意"，"基本上同意，但部分不同意"及"完全同意"，請其作程度上之認定。一般言，多數新近畢業生對現有工作不滿意者較多於滿意者，兩者之比率約爲百分之55對百分之45。在農業性(20%)及非農業性(26%)工作中表示基本上或完全滿意者均以私營事業者爲多(21%)；表示基本上或完全不滿意者亦以私營事業者爲多(46%)。

年事較長之畢業生對其工作感表滿意。表示滿意者約有百分之50，表示尚可者百分之42，對其工作表示不滿意者僅有8%。該項問題爲："你對本項工作滿意之程度如何？"滿意程度區分爲"非常滿意"，"滿意"，"尚可"，"不滿意"及"非常不滿意"。表示最大滿意程度爲從事農業教育者(62%)，依次甚爲接近之類別爲非農業公營事業者(59%)，農業公營事業者(57%)及農業政府機關(55%)。表示最不滿意者爲私營農業類者(20%)，但同類中亦有24%表

示滿意。

Employer and type of job. The graduates were asked to indicate the nature of their job and their employer so that the responses could be classified according to type of employer and level of job. In addition, the analysis provided an opportunity to look at the employment according to year of graduation, rank in graduation class, and the major or curriculum studied in the V-A school.

About 40 percent of the graduates indicated they were employed in agricultural positions. More than one-third (35%) reported they were employed in the private sector while 28 percent reported employment by government as shown in Table 22. There were major differences in the patterns of employment according to the length of time since graduation. For the older graduates, about 31 percent were employed by government, 29 percent in private enterprise and 23 percent in public enterprises. For the more recent graduates, about 65 percent were employed by private enterprises and only 11 percent by government and about 3 percent by public enteprises.

雇主及工作類別 畢業生曾要求說明其工作及雇主之性質，以便依雇主特質及工作等級予以分類。此項分析將提供機會藉以瞭解就業與所依據之畢業年數，班中名次，及在農校中所讀科別間之關連性。

畢業生中約有40%從事農業工作，超過三分之一(35%)任職於私營事業而有百分之28任職於政府機關。見表22.畢業之久暫與任職之類別有明顯之差別，早期畢業生約有百分之31任職於政府機構，百分之29在私營機構，百分之23在公共事業，新近畢業生中約有百分之65任職於私營事業，百分之11在政府機構，約百分之3在公共事業。

The data revealed that of the older graduates who were in agricultural positions, there were about four times as many in non-farming agricultural positions as there were in farming. For the more recent graduates the picture was quite different with the ratio about one to one, as shown in Table 23. It should be noted that a some of the persons employed in professional and clerical positions were in agricultural positions although the coding failed to clearly identify them as such.

The employment of graduates in agricultural positions has been used as one of the measures for achievement of the goals for agricultural education. Although there ae many factors which affect the extent to which the graduates may enter and remain in agicultural positions, the employment pattern is one of the measures which should be used. The following Table 24 contains data about the extent to which senior graduates from V-A schools have reported employmnet in agricultural occupations during the course of four research projects. For example, the most recent graduates during each of the studies showed a continued decline in the proportion in agricul-

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Table 22. Kind of Job and Type of Employer for Older Graduates and Most Recent Graduates.

表二十二. 早期畢業生及多數近期畢業生所就職業及雇主類別

Employer & Kind of Empl. 雇主及其類別	Kind of Job 職業類別						Total 總計	
	Agriculture 農業			Non-Agriculture 非農業				
	Old Grads 早期畢業生	Rec. Grads 近期畢業生	Sub-Total 小計	Old Grads 早期畢業生	Rec. Grads 近期畢業生	Sub-Total 小計	No. 人數	%
Government 政府	54	1	55	55	6	61	116	27.55
Pub. Enterprise 公營事業	44	0	44	37	2	39	83	19.71
Pvt. Enterprise 私營事業	42	16	58	62	26	88	146	34.68
Education 教育	13	2	15	44	4	48	63	14.96
Other 其他	0	0	0	5	8	13	13	3.09
Total 總計 No.	153	19	172	203	46	249	421	
Percent 百分率			40.86			59.14		100.00

Note: The number of missing observations = 24. Old Grads refers to the 1950, 1955, 1959, 1964, and 1969 graduates. Rec. Grads refers to the recent graduates (1982 & 1984).

註：無資料者24人，早期畢業生包括民國39, 44, 48, 53及58各年次畢業者，新近畢業生包括71及73年期畢業者。

Table 23. Kind and Level of Pressent Jobs Held by Graduates by Year of Graduation.
表二十三．不同年期畢業生就業之種類及級次

Kind and Level of Employment 就業種類及級次	Year of Graduation 畢業年期					Sub-Total 小計		1982 & 84(71,73)		Total 總計	
	1950 (39)	1955 (44)	1959 (48)	1964 (53)	1969 (58)	No. 人數	Percent 百分率	No. 人數	Percent 百分率	No. 人數	Percent 百分率
Agricultural 農業性											
Farming 經營農事	6	6	4	5	3	24	6.70	7	10.40	31	7.31
Agr. Tehcnician 技術員	12	19	18	18	13	80	22.40	6	9.00	86	20.28
Ext. Work/Supr 推廣員	3	2	1	2	0	8	2.20	0	0.00	8	1.89
Non-Agricultural 非農業性										0	
Professional 專業性	5	22	29	21	16	93	26.10	10	14.90	103	24.29
Managers 經理	19	15	13	12	13	72	20.20	1	1.50	73	17.22
Clerical 文書	11	10	16	8	5	50	14.00	11	16.40	61	14.39
Laborers 工人	0	2	5	4	6	17	4.80	15	22.40	32	7.55
Skilled 技術性	0	0	1	1	2	4	1.10	3	4.50	7	1.65
Military 軍人	0	0	0	0	1	1	0.30	7	10.40	8	1.89
Miscellaneous 一般	0	3	1	1	3	8	2.20	7	10.40	15	3.54
Toatl 總計	56	79	88	72	62	357	100.00	67	100.00	424	100.00

Note: There were 10 missing observations for 1982 & 84 and 11 missing for the older graduates.
註：71及73年畢業生有10名及早期畢業生有11名無資料

tural occupation, except for the 1982 and 1984 graduates in 1989. In 1962 when data were gathered about 25 percent of the 1959 graduates were in agricultural occupations; and in 1968 about 20 percent of the 1964 graduates were in agricultural occupations. A review of other data would probably reveal that the decline was nearly parallel to the drop in the proportion of the overall labor force which was in agriculture.

數據顯示早期畢業生從事農業性職業，其中非經營農事者超過經營農事者達四倍之多，近期畢業者，則情況顯有不同，兩者之比率約爲一對一，見表 23。應指出者若干任職於專業性，文書性工作者原應歸屬農業類，鍵入工作未曾識別歸類。

畢業生從事農業性職業常用以衡量農業教育之成就，雖然有多種因素影響畢業生進入並持續其農業類職位，就業類型應爲測計方法之一，表 24 列示在四次研究計畫中，高農畢業生從事農業性職業之情形，例如各研究年度最新近畢業年次學生從事農業性職業之比率除71及73年畢業者在78年之數據外，每次研究均係逐次下降，51年所得48年期畢業從事農業性職業約有百分之 26，而57年所得 53年期畢業從事農業性職業者僅有百分之 20。參照其他資料當可顯示此種消退實與農業總勞動力之不足同步下降。

Table 24. Percent of V-A Graduates Employed in Agricultural Occupations by Year of Graduation and Year of Collection of Data.

表二十四. 不同畢業及資料蒐集年期之農校畢業生任職於農業性職業之百分率

Year of Graduation 畢業年	Percent Employed in Agricultural Occupations 農業就業百分率							
	Year Data collected 資料蒐集年							
	1962(51)		1968(57)		1975(64)		1989(78)	
	(n=)	%	(n=)	%	(n=)	%	(n=)	%
1950(39)	568	58.50	432	45.37	197	38.80	58	51.72
1955(44)	563	41.00	439	38.73	219	37.00	78	47.44
1959(48)	785	25.40	605	41.33	284	30.30	89	34.83
1964(53)			698	20.80	327	27.20	72	43.06
1969(58)					550	17.30	62	40.32
1982 & 84(71,73)							70	42.86

Notes. Data for this table came from previous research reported by Meaders and Hu. the reader is cautioned to not generalize from the data collected in 1989 due to the low rate of response to the mailed questionnaire. (n=) refers to the sample respondents.

註：本表數據均係本文作者以前各項研究所得，由於78年所獲回函數過少，不宜等量齊觀. (n=)表回函數

Another way of looking at the employment of the graduates is to study the employment in relation to the curriculum which the graduate studied in the V-A shcool. Most of the graduates who responded were from the Agronomy (31%), Animal Hus-

bandry and Veterinary (18%), and Farm Management (22%) curricula. The graduates most likely to be in agricultural positions were the older graduates from the Animal Husbandry and Veterinary curricula (52%), Forestry (45%), Farm Management (39%), Agronomy (38%), and Agricultural Machinery (38%).

另一種觀察畢業生就業之方法爲研究畢業生在農校所讀科別與就業之關係，多數畢業生來自農藝科(31%)，畜牧獸醫科(18%)及農場經營科(22%)，從事農業性職業者多爲早期畢業於畜牧獸醫(52%)，森林(42%)，農場經營(39%)，農藝(38%)及農業機械(38%)等科之畢業生。

School help getting job. The 1982 and 1984 graduates were asked to indicate whether or not they believed that the V-A school helped them get a job after graduation. Most of the graduates (64%) indicated that they believed the school did not help them get a job. Given an opportunity to explain their answer, about 25% indicated that their schooling was not related to the kind of job which they secured and 22% indicated that the job was related to their schooling. Perhaps the importance of the responses lies not in the reality of whether or not the schooling and job were related but rather in the perception of the graduates about the relationship of the schooling to the work and to the perception about whether or not the shcooling helped in getting the job.

學校協助就業　曾詢及71及73年畢業生是否相信當畢業後農校曾否協助其謀求職業，多數畢業生(64%)認爲學校未曾協助就業，百分之25之學生指出學非所用，而另有百分之22之學生則持正面看法。重要者或不在答案之所學能否致用而在畢業生對求學與致用兩者關係之感受以及學校是否曾經協助其就業之感受。

Recent Graduates' Opinions about Vocational Agriculture Programs

The 1982 and 1984 graduates were asked to express their opinions on several matters directly related to the vocational agriculture schools and their programs. One example is the question about whether or not they thought the V-A school training helped them get their first job (see above). In addition there were items which dealt with influence on choice of career, help in getting the first job, and 16 items dealing with various aspects of school policy and programs.

新近畢業生對農職教育之意見

71及73年畢業生曾要求對農校及其若干措施表示意見，事例之一即在農校接受之教育是否有助於第一次就業(見前節)，尚有就業之選擇，另有16項涉及學校行政及教學計畫等。

Choice of career. It is generally known that parents are usually identified as perhaps the most significant source of influence when youth make career choices. Usually teachers are more frequently identified than counselors; and, in general, family and relatives are identified as strong influences more often than the school. However, the graduates were asked to check the most influential person in their choice of a career. "Self" and "relative" were much more frequently checked than any other persons as shown below.

職業之選擇 當青年作就業之選擇時，父母常被認爲係最具影響力之人士，教師之影響力亦大於教育官員。一般言，家庭成員及親戚之影響力大於來自學校方面者，曾就此一方面對畢業生徵詢其就業時具有影響力之人士，答案爲"自己"及"親戚"者所占之比率超過其他人士甚多，如下所示：

Most Influential in Career Choice 對就業選擇最具影響之人士	Percent 百分率 (n=77)
Myself 自己	49.4
Relative 親戚	24.7
V-A Sponsor 農校就業輔導組	7.8
V-A Teacher 農校教師	6.5
Friend 朋友	2.6
V-A Principal 農校校長	1.3
College Professor 大學教授	1.3
Others 其他	5.2
No Response 未作答	1.3

When asked "When did you choose your career?" most of the graduates indicated the choice was made after graduation from the V-A school. Only about 10 percent reported the choice was made during V-A school as shown below.

對問"何時選擇職業？"時，多數畢業生表示在農校畢業以後，僅有百分之10聲稱在就學時即已開始。

When Choice of Career Was Made 何時選擇職業	Percent 百分率 (n=77)
After V-A 高農畢業後	62.3
After College 大專畢業後	10.4
During V-A 就讀高農時	10.4
Before V-A 就讀高農前	5.2
During College 就讀大專時	2.6
No Response 未作答	9.1

Help getting first job. Three items on the questionnaire attempted to get information from the graduates about their perceptions of the role of the V-A school in helping them get their first job. First, they were asked to indicate WHO was most helpful; then, with a yes or no question, did the V-A school training help; and finally, regardless of whether they answered YES or NO, they were asked to explain their answer.

Relatives and friends were identified by 52 percent of the respondents as most helpful in getting the first job. About 12 percent indicated that persons at the V-A school (V-A Sponsor V-A Teacher) were most helpful; and 27 percent indicated "Other" as the most helpful.

About two-thirds (64%) of the respondents indicated that the V-A school training was NOT helpful and about one-third (35%) indicated the training WAS helpful. The open-ended responses by the graduates when explaining their YES or NO answer, were coded into six categories. About one-third (38%) gave no response; about one-fourth (24%) of the responses were identified as fitting the category of "NO relationship, or the nature of the first job was different from what was learned in school"; and a few more that 20 percent of the responses were coded as fitting the category of "What was learned in school can be put into practice or is closely related to the job." About four percent of the responses were classified as fitting the category of "General background training was given by the school" and about 10 percent of the responses were classified as fitting "Other reasons."

協助第一次就業　問卷中列有三項問題以期獲知畢業生對農校協助其就業所扮演之角色之感受。首先，詢以對於就業何人幫助最大，其次爲農校之訓練是否有助於就業，最後請其就肯定或否定予以說明。

回函者有百分之52認爲親戚與朋友在獲得第一次就業最有幫助，約有百分之12認爲農校(農校教師或就業輔導組成員)最有幫助，另有百分之27則認爲其他人士最有幫助。

約有百分之64之回函者認爲農校教學無所助益，有三分之一(35%)則認爲有助益，畢業生不設限之回答有關是或否之答覆歸納爲六種類別，約有三分之一(38%)未作答，約有四分之一(24%)之回函者認爲"無關連，或第一次所就職業之性質與在校所學者至不相同"；略多於百分之20之回函者歸入"在校所學有實用價值或與工作有密切關連"，約有百分之四之回函歸入"學校提供一般性基礎訓練"，另有百分之10之回函納入"其他原因"。

When compared to the responses in 1975 of the 1969 graduates to the YES/NO question about the V-A school training being helpful to get the first job, about 50

percent reported NO and 45 percent reported YES. Those who said YES were most likely to explain their answer by indicating what was learned in school could be put into practice or was closely related to their job (25%); and those who said NO were most likely to explain their answer by indicating there was no relationship between the nature of their first job and their training in the V-A school.

Although the responses indicate that the graduates perceive that career choices were mainly made after graduating from the V-A schools, and that relatives and friends were most influential, the conclusion should not be drawn that the V-A schools did not influence the choices. Many factors affect caeer decisions and the role models of teachers and administrators in addition to the classroom and practice related experiences were a part of the overall decisions about careers.

當將農校教學對獲得第一次就業有所助之是/否之提問與在64年所作對58年畢業生同樣問題之回答作比較，約有百分之50答否，百分之45答是，回答是者多表示在校所學能直接用於或非常接近於所就職業(25%)；回答否者多表示在校內所學與第一次所就職業無關連。

雖然回函指出畢業生感受就業機會主要開始於農校畢業之後及親戚與朋友具最大影響力，但不能遽作論斷農校未有任何作爲。有多種因素影響職業之決定，居於重要角色之教師及學校行政主管以及教學與實習對經驗之累積，對職業最後之決定均具有部分之決定性。

The courses and laboratory work. Three items were designed to give the graduates an opportunity to express their opinions about the nature of the courses and the amount of time spent in class and in laboratory. For these items the response categories were on a four--point scale as follows: (1) Strongly Disagree, (2) Partially Agree but Mainly Disagree, (3) Partially Disagree but Mainly Agree, and (4) Strongly Agree.

The response to the item "V-A school courses are too theoretical" was that most of the graduates disagreed (64.9%) while about 35 percent tended to agree as shown in Table 25. In response to the item "Not enough time is spent in the laboratory", about 60 percent were in agreement with the statement. Finally, for the item "Not enough time is spent in practice", about 42 percent were in agreement. It seems that the graduates perceived that the amount of theory in the courses was relatively good; they would have liked more laboratory time; but would have preferred less time spent on practice (probably meaning less time on the school land laboratory).

課程與實驗 對畢業生設定三項意見，徵詢其對課程及上課、實習等表示其看法並將其區分爲四種尺度：(1)極不同意(2)部分同意但基本上不同意(3)部分不同意但基本上同意及(4)極爲同意。

對所提"農校課程過於理論化"爲多數畢業生表示極不同意者(64.9%)，但同意者亦有百分之35，見表25對"實驗室時間不足"一項有百分之60同意此項說法。對"實習時間不足"一項則有百分之42同意。由此可以查覺畢業生對課程中理論部分之份量尚稱滿意；並願多作實驗工作(或不願花太多時間於學校農場上)。

Table 25. Opinions of 1982 and 1984 Vocational Agriculture Graduates About Taiwan Vocational Agriculture Programs.
表二十五. 71及73年畢業生對台灣農職教育之意見

Items 項 目	Percent Agree* 同意百分率 (n=77)	Mean 均數 x	SD 標準差
The V-A school courses are too theoretical. 農校課程過於理論化	35.06	2.38	0.81
Not enough time is spent in the laboratory. 作實驗的時間不夠	59.74	2.79	1.07
Not enough time is spent in practice. 作實習的時間不夠	41.56	2.35	1.02
All V-A students should come from farms. 所有農校學生均應來自農家	28.57	2.20	1.01
V-A schools should enroll both boys and girls. 農校應男女生兼收	93.51	3.74	0.89
Only students interested in agriculture should be enrolled in V-A schools. 農校僅應招收對農業有興趣之學生	67.53	3.01	1.07
V-A schools should offer classes to farmers. 農校應對農民開設講習班	96.1	3.74	0.52
V-A schools should place most emphasis on agricultural subjects. 農校應著重農業學科	74.03	3.18	0.88
V-A schools should use actual problems of farmers for teaching about new agricultural practices. 農校應以農民遭遇之困難作爲教學之實際題材	89.61	3.66	0.74
V-A teachers should have time to teach students and farmers out on their farms. 教師應在學生及農民自家農場上予以指導	51.95	2.75	1.11

source: Questionnaires collectd from 1982 and 1984 graduates during March-April 1989. Responses were recorded on a 4-point scale from (1) "Completely disagree" to (4) "Completely Agree."

* Responses of "Completely agree" and "Partially disagree but mainly agree" were combined.
資料來源：78年春調查71及73年畢業生之問卷。
學生依四種不同程度之答案選填，"完全同意"及"基本上同意"兩項合併。

Who should be enrolled. Three items were used to solicit opinions about who should be enrolled in the V-A schools. the responses categories were the same four-

point scale as mentioned previously. The response to the first item "All V-A students should come from farms" was one of most disagreement. In other words, only less than 30 percent of the respondents agreed with the statement. But to the item "V-A schools should enroll both boys and girls" there was agreement shown by 94 percent of the respondents.

A third item, "Only students interested in agriculture should be enrolled", was one which brought forth a general agreement by 68 percent of the respondents. These respondents appeared to believe that enrollment in the V-A schools should be open to students from rural and urban areas, should be open to both boys and girls, and mainly be those persons interested in careers in agricultural occupations. (See Table 25)

何人應就讀農校　設定三種意向要求畢業生對何人應就讀農校提出其意見，四種同意尺度與前節者相同。對第一項"所有農校學生均應來自農家"爲表示最不同意之一項，質言之，僅有不足百分之30之回函者同意此種看法，但對"農校應招收男女生"一項，回函者有百之94表示同意。

第三項"農校僅應招收對農業有興趣之學生"獲得百分之68之同意，居第四位，回函者似乎篤信農校入學之學生應包括來自農村及都市者，包括男生及女生以及醉心於農業性職業者。

Emphasis for teaching. Four items were used to secure opinions about the teaching at the V-A schools. The first item, to which 96 percent of the respondents expressed agreement, to which 96 percent of the respondents expressed agreement, was "V-A schools should offer classes to farmers." The schools do offer some classes for farmers, as reported previously, but this would seem to be a strong endorsement of that role.

The second item, "V-A schools should place most emphasis on agricultural subjects", also received a high level of agreement (74%) by the respondents. The third item, "V-A schools should use actual problems of farmers for teaching about new agricultural practices", had 90 percent of the respondents indicating agreement. Finally, the fourth item, "V-A teachers should have time to teach students and farmers out on their farms", had only a few more in agreement (52%) than in disagreement.

It would appear that this set of respondents would favor having the teachers at the V-A schools be very much "in tune" with farmer problems and be able to use that reality as part of the basis for effectively putting much emphasis on the agricultural courses.

加强教學　關於農校教學方面列出四項觀點用以徵詢畢業生之意向，對

第一項"農校應向農民施教"，有百分之90之回函表示同意，前節已提出農校對農民施教已行之有年，此項表示當視爲對該向作爲之認同。

第二項，"農校應大力加强農業學科"，亦爲回函者高度認可(74%)，第三項"農校應以農民遭遇之困難作爲教學之實際題材"獲得90%回函者之同意，最後一項"教師應在學生及農民自家農場上予以指導"在同意之程度上僅有微小之差距超過不同意(52%)。

綜觀以上系列之回應，對教師在農校能充分配合農民之農事問題并利用其事例有效的加强農業課程似至期許。

Income for Past Year

The graduates were asked to indicate their cash income for the past year. Those who were farming were instructed to use net income. They could indicate income on either a yearly or monthly basis. All replies were, if necessary, converted to an annual income basis. (The exchange rate in effect at the time of the study was US$1 = NT$27.)

About one-third of the recent graduates and two-fifths of the older graduates did not respond to the question. Of those who did respond, most of the recent graduates (2/3rds) reported income of NT$20,000 or less; and the older graduates generally reported a higher income, as one would expect. Nearly 75 percent reported income of NT$32,000 or less and about 20 percent reported income of NT$40,000 or more.

去年之收入

曾要求畢業生告知去年現金收入若干，從事農業者得以淨收入爲準，以年計或以月計均可，必要時轉換成年收入。

近期畢業生約有三分之一，早期畢業生約有三分之二未曾答覆此問題，新近畢業者其收入爲新台幣20000元或不足此數，早期畢業者，一如想像中，收入較多，將近百分之75約達新台幣32000元或不足此數，約有百分之20稱其收入達40000元或更多。

Technical Agriculture Graduates

農專畢業生

The responses from the techincal institute graduates were from two separate groups: First, an older group, the 1964 and 1970 graduates who had responded in a 1975 study (33 respondents); and second, the sample of more recent graduates (1984) consisting of 99 respondents. The older graduates were nearly equally divided be-

tween the 2-year and 3-year programs (see Table 1 for details). The reader is again cautioned that because of the relatively low rate of response (15-36%), the data are not likely to be representative of the population.

農專畢業生之回函者來自兩個獨立之群體，其一爲年事較長者，民國53年及59年畢業，曾於64年研究中回答問卷(33人)；其二，新近畢業生(72年)，有99名回函者，早期畢業生中二年制及三年制者約各占半數(參閱表一)，由於回函率偏低，數據較不具代表性。

Gender

Most of the respondents were male. The older graduates (1975 respondents) included 31 males and two females. The respondents among the more recent graduates included 74 males and 25 females. This proportion of male to female respondents does tend to represent the shift in enrollment of a higher proportion of females since the late 70's and early 80's.

性別

多數回函者均爲男性，早期畢業生(64年回函者)包括31名男性及兩名女性，在近期畢業生中包括74名男性及25名女性，此一男性與女性回函者人數之比率確能代表自民國60年代末至70年代初女性入學之比率逐年升高之情勢。

Age

Moet of the more recent graduates, those who graduated in 1984, were in the age range of 25-34 (91%); and most of the older graduates, those who graduated in 1964 or 1970, were in the age range of 35-49 (32 out of the 33 respondents).

年齡

大多數近期畢業生，民國73年畢業者其年齡當在25－34歲(91%)。多數年長畢業生，畢業於民國53年或69年，其年齡當介於35－49歲(33名回函者占32人)。

Parents Occupations

Information about the occupations of the parents of the graduates was available for about 60 percent of the recent graduates and 25 percent of the older graduates. Agriculture was the most frequently reported occupational area for the parents as shown in Table 26. Overall, for the 132 respondents, no information was available

about the occupations for about 50 percent of the parents. Slightly over 10 percent were employed as government workers.

家長職業

畢業生家長職業根據資料百分之60來自新近畢業生，百分之25來自年長畢業生，職業類別所占最多者爲從事農業者，見表26、略多於百分之10之家長爲公務員。在全體132名回函者中有百分之50家長之職業無從獲知。

Table 26. Occupational Areas of Parents of Institute Graduates When the Graduates Enrolled in the Institutes.
表二十六. 農專畢業生就學時家長從業之範圍

Occupational Area 從業範圍	Year of Graduation 畢業年期				Total 總計	
	1964(53) & 1970(59)		1984(73)			
	No.	%	No.	%	No.	%
Agriculture 農業	3	9.09	23	23.23	26	19.70
Industry 工業	2	6.06	9	9.09	11	8.33
Commerce 商業	1	3.03	9	9.09	10	7.58
Professional 專業性			2	2.02	2	1.52
Government 政府機關	2	6.06	12	12.12	14	10.61
Miscellaneous 一般			2	2.02	2	1.52
Other Non-agriculture 其他非農業			2	2.02	2	1.52
No Information 未作答	25	75.76	40	40.40	65	49.24
Total 總計	33	100.00	99	100.00	132	100.00

Source: Reports provided from records at the Insitutes.
資料來源：學校檔案

Major in Institute

The largest number of the respondents were graduates from the Veterinary and Food Processing majors. The numbers of respondents from each of the major areas of study are shown in Table 27. Overall, the 132 respondents, about 60 percent of the respondents had studied in three of the several major fields: Veterinary(22.73%), Agricultural Machinery (18.94%), and Food Processing (17.72%).

主修科別

回函之畢業生多主修獸醫及食品加工，各個科別回函者之人數見表27、132名回函者中百分之60來自獸醫科(22.73%)，農業機械(18.94%)及食品加工(17.72%)。

Table 27. Major Fields of Study by Technical Institute Graduates
表二十七. 農專畢業生在校主修科別

Major Fields 主修科別	Year of Graduation 畢業年期 1964(53) & 1970(59) No.	%	1984(73) No.	%	Total 總計 No.	%
Farm Mgmt./Agr. Econ. 農場/農經			10	10.10	10	7.58
Crops and Soils 作物與土壤	5	15.15	9	9.09	14	10.61
Horticulture 園藝	2	6.06	10	10.10	12	9.09
Forestry 森林	2	6.06	12	12.12	14	10.61
Veterinary 獸醫	8	24.24	22	22.22	30	22.73
Agr.Civil Engineering 農業土木	2	6.06	1	1.01	3	2.27
Food Processing 食品加工	7	21.21	16	16.16	23	17.42
Agr. Machinery 農業機械	7	21.21	18	18.18	25	18.94
Other 其他		0.00	4	40.40	65	49.24
Total 總計	33	100.00	99	100.00	132	100.00

Source: Reports made available at each of the Institutes.
資料來源：學校檔案

Native Place

Most of the graduates identified their native place as Taiwan. Only eight percent of the more recent graduates and nine percent of the older graduates identified their places as "Mainland."

籍貫

多數畢業生聲稱其籍貫爲台灣，僅有百分之八之新近畢業生及百分之九之早期畢業生籍隸"大陸"。

Present Residence

The present residence of the graduates was classified acccording to proportion of the population engaged in agriculture as defined by the Taiwan Agricultural Yearbook. Most of the graduates were currently living in the counties which had the more rural characteristics, at least they had the highest proportions of the population

engaged in agriculture, as shown in Table 28. More than 70 percent of the graduates were found to be living in counties with 25 percent or more of the population in agriculture. Less than one-fourth (22.73%)were living in counties and cities with less than 15 percent of the population in agriculture.

現在住所

畢業生現在住所係以台灣農業年報所刊從農人口之比率而區分，多數畢業生現多居住於較具農業特質之縣份中，如表28所示。此等縣份均為從事農業之人口較多者。超過百分之70之畢業生所居住之縣份農業人口均達百分之25或更多。少於四分之一(22.73%)之畢業生居住之縣、市農業人口不足百分之15。

Table 28. Number and Percent of Institute Graduates by Year Graduation and Area of Present Residence.
表二十八．農專畢業生以畢業年度區分之現住所之人數及百分率

% Pop. in Agriculture* 農業人口百分率	Year of Graduation 畢業年度				Total 總計	
	1964(53) & 1970(59)		1984(73)			
	No.	%	No.	%	No.	%
45-54.9%	7	21.21	27	27.27	34	25.76
35-44.9%	8	24.24	30	30.30	38	28.79
25-34.9%	7	21.21	14	14.14	21	15.91
15-24.9%			7	7.07	7	5.30
Less than 15% 少於15%	11	33.33	19	19.19	30	22.73
No Response 未作答			2	2.02	2	1.52
Total 總計	33	100.00	99	100.00	132	100.00

Source: Data provided by each respondent to a questionnaire in 1989.
資料來源：78年問卷經處理後之數值。

* The proportion of the population in agriculture ranged from 54.01 percent in Yunlin County to 1.22 percent in Keelung City.
農業人口比率之差距自雲林縣之54.01%至基隆市之1.22%。

Schooling After Graduation from the Institutes

More than one-fifth (23.2%)of the 1984 graduates indicated that they had attended another college/university after graduation from the agricultural insititutes. Thirteen of the 23 indicated that they had attended National Chung Hsing University. Six reported they had graduated, 15 were still enrolled, and two did not indicated their present status. Thirteen indicated their further study was in agricultural fields and thirteen reported they had received baccalaureate degrees.

農專畢業後之學業

超過五分之一(23.2%)之73年畢業生聲稱畢業後曾再就讀大學院校。23人中有十三人曾進入中興大學就讀，其中六人已畢業，15人尚在就讀，兩人未曾說明其現況。十三人稱未來學習仍在農業領域，有十三人稱已獲得學士學位。

Employment of Graduates

Most of the graduates were employed. Ninety-one percent of the older graduates and 47 percent of the more recent graduates indicated they held one job; nine percent of the older graduates and three percent of the more recent graduates reported two or more jobs. One of the more recent graduates reported being in the military service, and 15 were still enrolled as students. However, one-third (35.4%) of the more recent graduates did not answer the question about the number of jobs which they held.

When asked to indicate the nature of their employer, on a four choice response (Self, Private Organization, Government, or Private Person), their responses were as shown in Table 29. Government was reported to be the major employer. Nearly 60 percent of the older graduates and 36 percent of the 1984 graduates were employed by Government. Two differences between the older graduates and the 1984 graduates were employed by Government. Two differences between the older graduates and the 1984 graduates were: a larger proportion of the 1984 graduates were employed by private organizations; and a larger proportion of the 1984 graduates failed to respond to the question.

畢業生之就業

多數畢業生均已就業。百分之91之早期畢業生及百分之47之新近畢業生聲稱獲得一項職業；百之九之早期畢業生及百分之三之新近畢業生獲得兩項或多項職業。新近畢業生之一稱尚在服役期中，15人尚在求學，另有三分之一 (35.4%)之新近畢業生未曾回答此一有關就業之問題。

當詢及其雇主之性質，在設定之四種選答(自營、私營機構，政府及個人經營)，其答案見表29。其中以政府爲雇主者最多，將近百分之60之早期畢業生及百分之36之73年畢業生受雇於政府。早期畢業與73年畢業者有兩點不同:大部分73年畢業者受雇於私人機構，且有多數未曾回答此一問題。

Table 29. Employers of Agricultural Institute Graduates.
表二十九. 農專畢業生之雇主

Employer 雇主	Percent of Graduates 畢業生百分率 1964(53) & 1970(59) (n=33)	1984(73) (n=99)	Total 總計 (n-132)
Self 自營	21.21	4.04	8.33
Private Organization 私營機構	12.12	31.31	26.52
Government 政府	57.58	36.36	41.67
Private Person 個人經營	6.06	9.09	8.33
No Response 未作答	3.03	19.19	15.15
TOTAL 總計	100.00	99.99	100.00

Source: Responses in 1989 to a questionnaire.
資料來源：78年問卷答案

Time on job

Most of the graduates were employed full-time. Three out of every four (75.8%) of the 1984 graduates reported full-time employment; and more than nine out of every ten (93.9%) of the older graduates were employed full-time.

工作時間

多數畢業生任職均係專業性，四分之三(75.8%) 之73年畢業生稱爲專業性。早期畢業生中超過十分之九(93.9%)亦爲專業性。

Job Satisfaction

The graduates responded to question with a five-point scale (Very Satisfied, Satisfied, Neutral, Dissatisfied, Very Dissatisfied) about their job satisfaction. In general, the graduates were satisfied with their jobs, or neutral in their responses.

對工作滿意之程度

向畢業生提出列有五種尺度(非常滿意，滿意，尚可，不滿意，非常不滿意)以徵詢其對工作滿意之程度。一般言，回函者對其工作成表滿意或認爲尚可。

Level of Satisfaction 滿意之程度	Percent 百分率 Older Grads 早期畢業生 (N=33)	1984 Grads 73年畢業生 (n=99)
Very Satisfied 非常滿意	3.0	7.1
Satisfied 滿意	33.3	18.2
Neutral 尚可	54.5	46.5
Dissatisfied 不滿意	9.1	9.1
Very Dissatisfied 非常不滿意	0	1.0
No Response 未作答	0	18.2

Employer and Type of Job

The graduates were about equally divided in their emloyment between agricultural and non-agricultural jobs. Overall, about 40 percent were employed by private enterprises and 25 percent by public enterprises. However, those employed by private enterprises were mainly in non-agricultural jobs while those in agricultural jobs were quite equally divided between public and private enterprises as shown in Table 30.

雇主及工作類別

畢業生在農業與非農業方面就業約各占半數。整體言，約有百分之40任職於私人企業，百分之25在公營事業。在私人企業中者多非農業性工作，從事農業工作者約可等分爲公營及私營企業，見表30。

Most Important About Work

The most recent graduates, but not the older institute graduates, were asked to indicate what was most important about work. In other words, their opinions were asked as to what they thought was most important about to them about their job or work. The responses were divided mainly among five of eight alternatives which were listed on the questionnaire. The most freqently checked alternative was "Personal Interest" (19.2%). Three factors least frequently checked were: "Important Work", "Promotions", and "Serving Others". "Having a Job" was not a high priority for these most recent graduates, as shown below:

工作所爲何事

多數新近畢業生不含早期畢業者被問以何者爲工作最要尋求之事，問卷中列出八項答案，選擇最多之答案爲"個人之興趣"(19.2%)，三種選擇最多者爲"爲一項重要工作"，"日後晉陞"及"服務大衆"。"有一份工作" 對新近畢業者並不十分迫切。

Table 30. Kind of Job and Type of Employer for Older Graduates and Most Recent Graduates.
表三十．早期及多數近期畢業生所就職業及雇主類別

Employer 雇主	Kind of Job 職業類別						Total 總計	
	Agriculture 農業			Non－Agriculture 非農業				
	Old.Grads 早期畢業生	Rec.Grads 近期畢業生	Sub-Total 小計	Old. Grads 早期畢業生	Rec.Grads 近期畢業生	Sub-Total 小計	No.	%
Government 政 府	5	7	12	2	7	9	21	17.50
Pub.Enterprise 公營事業	4	14	18	3	9	12	30	25.00
Pvt.Enterprise 私營事業	13	6	19	1	29	30	49	40.83
Education 教育	0	10	10	5	5	10	20	16.67
TOTAL：總計：No.	22	37	59	11	50	61	120	100.00
Percent 百分率			49.17			50.83		100.00

Note: The number of missing observations = 12. Old Grads refers to the 1964 and 1970 graduates who responded to a research questionnaire in 1975. Rec. Grads refers to 1984 graduates.
One graduate indicated he was unemployed.

註：未經觀察者12人、早期畢業生指53年及59年畢業并在64年研究計畫中回答問卷者，新近畢業生指73年畢業者，有一畢業生稱未曾就業。

What Is Most Important about Work 工作所爲何事	1984 Graduates 73年畢業生 (n＝99)
	%
Personal Interest 個人興趣	19.2
Earn Money 賺錢	14.1
Good Working Conditions 好的工作條件	14.1
Security 安全	10.1
Having a job 有一份工作	6.1
Important Work 爲一重要工作	4.0
Promotions 日後晉陞	2.0
Serving Others 服務大衆	2.0
Other 其他	14.1

Recent Graduates Opinions About Technical Institute Programs

The 1984 graduates were given an opportunity to express opinions about the programs at the Institutes through a series of questions about their education, persons who helped them get their job, whether they would take the same major if they could retake their schooling at the institute, and other items.

In response to the question about whether or not the education which they received at the Institute helped them get their jobs, about three out of every 10 graduates indicated the education at the institute helped them get employment. However, about one-half reported "no", and another 20 percent did not respond to the question. A second question asked them to explain their response. Their responses were classified into four general categories: the instruction was related to the job; no relationship to job; the instruction was good general training; and other. About 38 percent did not respond to the second question. However, 37 percent indicated that the instruction which they received was definitely related to the employment which they entered.

When asked about the courses which they believed were most important to them, many courses were listed. The science and math courses were listed nearly as frequently as were the courses in their major areas of study. The reasons given for listing the courses as most important were mainly classified as "providing basic knowledge" (21.2%) and "providing skills" (34.3%).

新近畢業生對農專教育之意見

對73年畢業生曾以系列問題如學業，何人協助就業，如果再行回校讀書是否仍願就讀原科等徵詢其意見。

對於在農專所接受之教育是否有助於獲得第一次就業之問題，有十分之三之畢業生持肯定之態度。約有半數予以否定，另有百分之20未作答。第二項問題爲要求其表示意見者，分爲四類：教學與所就之工作有關係；與工作無關係；教學爲一良好的訓練；及其他，約有百分之38對第二項問題未作答。百分之37認爲所受之訓練與其所從事之工作確有關係。

當問以那一種課程對其最重要時，均列出多種課程，理化與數學出現之次數幾與必修科目相等，其所持之理由爲"提供基礎知識"(21.2%)及"提供技術"(34.3%)。

In another attempt to measure the graduates' feelings about their education at the Institutes, they were asked:

> "Looking back, if you were just beginning in the Agricultural Institute this fall, which of the following would you do?
> (1) Take the same major as before
> (2) Take a different agricultural major(Name---)
> (3) Prefer to take a non-agricultural major"

In their responses, they were equally divided between those who would take the same major (41.4%) and those who would change (to a different ag major, 18.2%; and to a non-ag major, 23.2%). About 17.2 percent chose to not respond to the quesion. It appeared, from the date, that, the graduates were reasonably satisfied with their educational programs at the Institutes.

Finally, three questions were provided to measure some of their thoughts about the future. First, they were asked what level of education beyond senior middie school would be best for persons in positions like theirs. Second, they were asked what kind of education would be best. And third, they were asked whether they thought persons like themselves in positions like theirs would be interested in taking additional courses to a) aid them in their present jobs or b) to aid them in getting a new job?

爲求瞭解畢業生對在農專所受教育之感受，曾以下列方式提出問題：

> "回顧過去，如果你是今年秋季剛在農專入學，下列三事將如何選擇？

(1) 像以前一樣，讀同一科
(2) 選擇另一種農業學科(科名_____)
(3) 選擇一非農業性學科"

在答案中，選讀同一科(41.4%)與改變科別者相等（改讀另一農科18.2%，改讀非農科別23.2%）。有百分之17.2未作答。由數據顯示畢業生對在農專所受之教育相當滿意。

最後，列出三項問題以期瞭解畢業生對未來何所思，第一，如回函者之情況，高中畢業後之學業應達到何種水平最爲合適，第二，接受那一類教育最好，第三，當有人其情況一如接受函問之畢業生則是否願意再事進修以a)加强現在之工作或 b)有助其另覓新工作？

A bachelor degree was the level of education beyond senior middle school which they indicated would be best for persons in positions like their own. The 2-Year, 3-Year and B.Sc degree levels accounted for the responses from nearly 60 percent of the responents, as shown below .

畢業生咸認與其自身學經歷相當之人士高中畢業後能獲得學士學位最爲理想。包括二年制、三年制及理學士，綜計達回函者之百分之60，如下所示：

	Percent 百分率
Nonthing beyond senior middle school 高中後不再繼續	9.1
2－Year Technical Institute 2－年制專科	19.2
3－Year Technical Institute 3－年制專科	12.1
4－Year Bachelor degree 4－年制學士學位	27.3
More than Bachelor degree 高於學士學位	2.0
Other 其他	8.1
No response 未作答	22.2

Apparently the agricultural majors were viewed as quite appropriate for the work of at least three out every ten of the respondents. The fields of agriculture, industry and commerce accounted for nearly 60 percent of responses, as shown below：

主修農科明顯地對於工作至爲適合，至少對回函者中每十人中有三人是如此，農業、工商及商業綜計達到回函者之百分之60，如下所示：

	Percent 百分率
Agriculture 農業	30.3
Industry 工業	13.1
Commerce 商業	15.2
Law 法律	1.0
Literature 文學	2.0
Other (misc.) 其他	16.2
No response 未作答	21.2

About six out every ten gradutes(61.5%) indicated they believed that persons like themselves would be interested in taking additional courses. Fifty-six indicated interest in taking additional courses for advancement in their present jobs. And 46.5% indicated they thought persons like themselves would be interested in taking courses to get a new job. In general, there was a very favorable attitude toward taking additional courses and in continuing education.

約有十分之六（61.6%)之畢業生認爲類似彼等情形有從事進修之必要。五十六人有意以現在工作之基礎上進修，另有46.5% 認爲依現處情勢宜再修習課程尋覓新工作。總之，畢業生對修習課程從事繼續教育均持積極之態度。

Chapter V
第五章

GRADUATES ENGAGED IN FARMING
經營農事之畢業生

Farming represents one of many occupations in agriculture. It is a basic occupation in the production of food and fiber as well as production of plants for aesthetic purposes, the flowers and shrubs for landscaping and beautification. The proportion of the labor forec in Taiwan engaged in agricultural occupations is most often equated with employment in farming, forestry, and animal husbandry. Although those occupations represent only part of the occupations where knowledge and skills relating to plants, soils and animals are necessary for success, the other agricultural occupations are linked with industry, commerce, service, and professions.

The V－A graduates and Technical Institute graduates engaged in farming constitute a significant part of the contributions of agricultural education to agricultural development and to the modernization of agriculture.

經營農事在農業中代表多種職業中之一種，對食物、衣著之生產以及花卉、樹木之養殖，佈置庭園以達審美之目的等均依爲基礎性之職業。台灣從事農業職業之勞動力即爲經營農事、林業、畜牧業等方面之人員。此等職業僅爲農業職類中之一部分，有者須具備動、植物及土壤等方面之知識方期作成功之經營，另有若干農業性職業則關係於工業、商業、服務業及專業性之範疇。

農職及農專畢業生從事農業經營對農業教育在農業發展以及農業現代化之歷程中展現其有意義之貢獻。

V－A Graduates Engaged in Farming
經營農事之農校畢業生

The graduates were asked whether or not they were now engaged in farming. The responses indicated that about one-third of the older graduates and 46% of the recent graduates were engaged in farming. Most of those engaged in farming were farming on a part-tine basis as shown below.

畢業生曾詢以現在是否經營農事，答案顯示約有三分之一之早期畢業生及百分之46之新近畢業生正從事農業之經營，但多爲兼業性，如下所示：

Graduates 畢業生	Percent 百分率 Full-Time 專業性	Part-Time 兼業性	Not at all 無
Older Grads(n＝368) 早期畢業	7.3	25.5	47.2
Recent Grads(n＝77) 新近畢業	9.1	36.4	54.5

Tenure in Farming.
經營權式

Most of those engaged in farming were owners, part owner/part renter, or a manager of a farm for a relative of some other person. The graduates were in farming mainly as owners and/or renters; however, a higher proportion of the younger graduates than the older graduates were managers of farms, as shown below.

多數經營農事者均係自耕農，半自耕農或經管親戚或他人之農場，畢業生之經營則以自耕農、半自耕農居多，新近畢業生較早期畢業者有較高之比率充任農場經理人，如下所示：

Farming Tenure 經營權式	Percent 百分率 Older Grads 早期畢業生 (n=149)	Recent Grads 新近畢業生 (n=430)
Owner 自耕農	63.7	39.5
Part Owner/Renter 半自耕農	8.0	2.3
Renter 佃農	3.4	0.0
Manager for Relative 經營親戚者	12.7	25.6
Manager for Other Person 經管他人者	3.4	4.6
Technician on Rel. Farm 耕種親戚者	2.7	7.0
Technician on Other Farm 耕種他人者	2.7	4.6
Other 其他	3.4	16.3

Management Role.
經營之角色

The role of the graduate in the management of the farming operation was determined by asking the respondents to indicate which of six roles was theirs. Although three management styles in addition to self-manager had been advocated, most of the graduates (about 61%) engaged in farming indicated the farm was managed by self. Only a small percentage indicated use of the three forms of management which had been advocated by the government for several years: Joint Farming with other farmers in the area to produce a common product; Entrusted Farming

where the land is entrusted by several farmers to one farmer for the management and operation; or Cooperative Farming.[17] There was little difference among the two groups, as shown below.

曾在問函中列出六種角色詢問畢業生以何種角色經營農事，雖經政府提倡三種經營方式，此外尚有自行經營，多數畢業生仍多自己經營(約61%)僅有少數依政府倡導之三種方式業已行之有年：與其他農民聯合經營共同獲得產品；若干農民將土地委託某一農民經營；或行合作經營，兩者之間無大差別，如下所示：

Management Form 經營方式	Percent 百分率 Older Grads 早期畢業生 (n=172)	Recent Grads 新近畢業生 (n=49)
Manage by self 自營	62.8	61.2
Joint Farming 綜合經營	5.2	4.1
Land Entrusted to Others 土地委託他人	5.2	2.0
Land Entrusted to You 土地委託自己	9.9	10.2
Member of Co-op Farm 合作經營成員	5.2	6.1
Techician on Farm 農場技術員	8.1	16.3
Other 其他	3.5	0.0

Size of Farm
農場面積

Farm size in Taiwan was relatively small. The average size farm throughout the island was reported to be slightly above one hectare. In this study the respondents were asked to indicaate their farm size in chia (one chia = 0.96992 Hectare). More than one-third of the recent graduates who were farming indicated the amount of land farmed at one chia or less; whereas about three out of the older graduates who were farming had one chia or less. About 30 percent of the older graduates and 36 percent of the recent graduates reported farming more than two chia as shown below.

台灣農民之農場面積均相當狹小，全島平均其面積約略超過一公頃，曾要求畢業生以甲（一甲＝0.96992公頃)表示其農場面積。多於三分之一經營農事之新近畢業生稱爲一甲或不足一甲；約有十分之三之早期經營農事之畢業生情況相同。約有百分之30之早期畢業生及百分之36之新近畢業生聲稱其農場面積超過兩甲：

Size of Farm (Chia) 農場面積(甲)	Percent 百分率 Older Grads 早期畢業生 (n=208)	Recent Grads 新近畢業生 (n=41)
Under 0.5 小於0.5	18.1	8.3
0.5 to 1.0	25.0	19.4
1.1 to 1.5	18.8	27.8
1.6 to 2.0	7.5	8.3
2.1 to 3.0	11.9	13.9
3.1 to 5.0	5.6	11.1
5.1 to 7.0	1.9	5.6
7.1 and over 7.1或更大	11.2	5.6

Use of Land
土地之利用

Many of the graduates produced rice on part of their land. More than 50 percent of all the respondents indicated that more than 50 percent of their land was "paddy." The crops most frequently reported by the older graduates were rice, fruits, sugar cane and vegetables. The crops most frequently reported by the more recent graduates were fruits and rice. The most frequently reported livestock and poultry were swine and poultry by both the older and more recent graduates. The number who reported various crops and livestock are listed below.

甚多畢業生僅利用其部分農地種植稻穀，超過百分之50之全體回函者稱其土地半數以上爲"稻田"。早期畢業生者種植之作物多爲水稻、果樹，甘蔗及蔬菜。新近畢業者多爲水稻與果樹、豬隻與家禽則普遍飼養，情況如下：

Crop/Livestock/Poultry 作物/家畜/家禽	Number Reporting 回答人數 Older Grads 早期畢業生	Rrcent Grads 新近畢業生
Rice 水稻	81	13
Fruits 果樹	41	14
Sugar Cane 甘蔗	34	3
Vegetables 蔬菜	14	4
Sweet Potatoes 甘藷	12	1
Other misc. 其他	55	19
Swine 豬	25	8
Poultry 家禽	19	8
Cattle 牛	3	4

Problems in Farming
農事上之問題

The graduates were asked, in an open-ended question to indicate their most serious problems in farming. The responses were then coded into seven categories with each respondent possible to indicate more than one response. The most freauently reported problems were in the areas of finance, marketing, and farm machinery. The categories of problems and the number of responses by each set of respondents was as follows:

曾以不設限之問題詢問畢業生在經營農事上最困難之問題爲何，并將其編爲七類，其中最常遭遇者爲財務、運銷及農業機械等方面，綜列如下：

Category of Problem 問題類別	Number Reporting 回答人數 Older Grads 早期畢業生	Recent Grads 新近畢業生
General problems in agric 一般農業問題	40	1
Production problems, except diseases and insects 除病蟲害外一般生產性問題	2	0
Disease and insect control 病蟲害防治	0	0
Marketing and processing 運銷與加工	15	5
Finance 財務	66	10
Farm machinery 農業機械	19	2
Other problems 其他問題	43	7

Sources if Help on Problems
協助解決問題者

The graduates were asked to indicate, on a 4-point scale, the frequency of help or information on farming problems. Thirteen possible sources of helps were listed. The 4-point scale was: Never, Seldom, Occasionally, and Freqently.

During the past several years there have been many changes in agricultural technology and in the technology related to means of communicating with producers. The advent of the VCR, the expansion of number of magazines and other publications from the agribusiness industries are but a few of the changes. The graduates were asked to provide some information about their sources of information and/or help on

their farming problems. In Table 31 are data about those responses.

The 13 possible sources may be grouped into five categories: other farmers, government agencies, quasi-government and public enterprises with agricultural extension programs, educational institutions, and media. Traditionally, most farmers seek and secure information about their farming problems from other farmers. The more innovative the farmer, or the more she/he is seen as an early adopter of improved technology, the more likely she/he is to go more directly to sources of new and improved technology such as experiment stations, agricultural schools and universities.

列出十三種協助解決問題之來源，要求畢業生以四種不同頻度列出解決問題之道，四種不同頻度爲：從未，很少，有時，及經常。

過去若干年在農業技術以及與生產者溝通方法之技術均有甚多之改進，錄放影機之問世，來自農企業及工業之雜誌及其他出版品之大量增加，僅係部分之變遷，表31爲要求畢業生提供解決農事經營困難助力來源之資料。

十三種可能之來源區分爲五類：其他農民，政府機構，準政府機構及設有推廣單位之企業，教育院校及傳播媒體。傳統上，多數農民常自其他農民處獲得解決困難之道、愈具有創意或能及時採用新技術之農民則亦必率先與改良場、農校及大學等接觸以直接獲取新穎之技術。

The V－A school graduates who were engaged in farming and who responded to this series of questions, most frequently indicated "Other Farmers" as a source of information and/or help on their farming problems. The rank order, based on the proportion of the respondents who indicated occasional or frequent use of the source, of the 13 sources was as follows:

從事農業經營之農校畢業生回答此類問題多指出"其他農民"常爲解決農事問題之來源，依13種來源出現次數多少之等級順序列示如下：

Table 31. Occasional and Frequent Sources of Information and/or Help on Farming Problems Reported in 1989 by Those Graduates Engaged in Farming by Period of Graduation.

表三十一. 從農畢業生以畢業年區分以有時及經常自來源獲得資料解決農事問題

Source 來源	Older Grads 早期畢業生			Recent Graduates 新近畢業生			Total 總計		
	n=	No.	%	n=	No.	%	n=	No.	%
Other Farmers 其他農民	98	71	72.45	33	24	72.73	131	95	72.52
Farmer Associations 農會	102	54	52.94	31	13	41.94	133	67	50.38
Taiwan Sugar Corp. Extension 台糖推廣部門	89	27	30.34	31	7	22.58	120	34	28.33
County/City Gov.(Agr./For.Div.) 縣市政府農業單位	91	16	17.58	31	3	72.73	131	95	72.52
Provincial Dept. Agr. & For. 農林廳	94	23	24.47	31	7	22.58	125	30	24.00
Council of Agriculture 農委會	90	14	15.56	31	4	12.90	121	18	14.88
DAIS*/Research Institutes 改良物/農試所	92	44	47.83	31	12	38.71	123	56	45.53
Agr. College/Agr. Institute 農學院/農專	89	7	7.89	31	10	32.26	120	17	14.17
V-A School 農校	88	15	17.05	31	8	25.81	119	23	19.33
Radio 收音機	88	31	35.23	32	7	21.88	120	38	31.67
Television 電視	94	53	56.38	32	14	43.75	126	67	53.17
Newspapers 報紙	94	54	57.45	32	11	34.38	126	65	51.59
Magazines 雜誌	99	70	70.71	32	21	65.63	131	91	69.47

Note: The graduates responded to a 4-point scale which included "Never." "Seldom." "Occasionally." and "Frequently." For this table only the responses to "Occasionally" and "Frequently" are shown and they have combined. The "Older Graduates" were those who graduated in 1950, 1955, 1964 and 1969. The "Recent Graduates" were the 1982 and 1984 graduates. "n="refers to the number of sample respondents to the specific items. The No. represents the number of responses of "Occasionally" and "Frequently."

*DAIS= District Agricultural Improvement Stations.

註：本表僅列出"有時及"經常"兩種頻度自來源獲得解決農事問題之數據，早期畢業生指39.44.48.53及58年畢業者，近期畢業生指71及73年畢業者，

n =某一單項回答人數

NO=表示"有時"及"經常"之人數

Source 來源	Total Grads 全體畢業生	Older Grads 早期畢業生	Recent Grads 新近畢業生
Other Farmers 其他農民	1	1	1
Magazines 雜誌	2	2	2
Television 電視	3	4	3
Newspapers 報紙	4	3	6
Farmers Associations 農會	5	5	4
DAIS/Research Institutes 農改場/農試所	6	6	5
Radio 收音機	7	7	11
Taiwan Sugar Corp. Ext. 台糖推廣部	8	8	9-10
Prov. Dept. Agr. & For. 農林廳	9	9	9-10
V－A School 農校	1O	11	8
County/City Gov.(Ag.Div.) 縣市府農林局	11	10	13
Council of Agriculture 農委會	12	12	12
Agr.College/Agr. Institute 農學院農專	13	13	7

(See Table 31 for more details.) 詳情見表31

The relative high ranking of the print and television media, even higher than the Farmers Associations, as sources of information and help should be noted. The Farmer Associations provide the front-line extension workers, and DAIS (District Agricultural Improvement Stations) also have extension programs.

出版品及電視居於相當高之名次，甚至高於農會之提供資訊及協助之地位頗堪注意，農會推廣人員擔當重任，農業改良場亦設有推廣單位。

Interest in Special Courses
對特殊課程之興趣

The graduates were given an opportunity to respond to a question about their interest in a special course if offered by the V-A School. The question was: "If the V-A School offered a special Farm Management course once or twice monthly, would you be interested in attending? If yes, please suggest farm management topics or subjects you would like to have taught." The responses were mixed; but about one-third (36.4%) of the older graduates and nearly one-half (46.8%)of the more recent graduates responded "Yes."

The areas of farm management which were suggested by the graduates were about equally divided among topics related to field crop production management, vegetable production management, and overall farm management.

對畢業生曾詢及是否對某一課程感興趣，問題爲：" 如學校開設一特殊之農場經營課，每月上課一兩次，是否願意？ 如果願意則希望教授那些內

容？"答案意見不一，但約有早期畢業生之三分之一及近期畢業生之半數表示"願意"。

畢業生對農場經營教學領域之意見包括有作物生產經營、蔬菜生產經營及一般性之農事經營，各類意見之人數約略相等。

Technical Institute Graduates Engaged in Farming
經營農事之農專畢業生

Very few of the technical institute graduates reported that they were engaged in farming. About one-third of the 33 responding older graduates (1964 and 1970) and 12 percent of the more recent graduates (1984)reported they were now farming, as shown below:

農專畢業生經營農事者爲數甚少，早期畢業生(53及59年)33名中約有三分之一及近期畢業生(73年)有百分之12聲稱現在經營農事，如下所示：

Now Farm 從業中	1964 & 53,59年 1970 Grads 畢業生 (n = 33)	1984 73年 Grads 畢業生 (n=99)
Full-time 專業	6	2
Part-time 兼業	5	10
	33%	12.1%

However, considerably more of those who responded indicated they had at some point in time farmed. Fourteen (42.4%) of the older graduates and 25 (25%) of the more recent graduates reported that they had farmed sometime in the past.

The size of the farms for those currently engaged in farming was mainly like the average size of farm in Taiwan. More than one-half were 1.5 hectares or less; and less than half were 2.1 or more hectares. Most of those who reported they were farming, indicated they were managing the farms by self.

The most frequently reported problems in farming were related to marketing and financing. The older graduates were asked to indicate their sources of information and/or help on farming problems. Although there were only 11 engaged in farming their responses were viewed as "suggesting" possible communication patterns for institute graduates. They most frequently got help from "Magazines", "Newspapers", "Television", and "Other Farmers". It appears that the least likely sources for their information and/or help were the following: "Taiwan Sugar Corporation Extension", "Radio", and "V-A Schools". These and other data are shown in Table 32.

Table 32. Sources of Help and/or Information on Farming Problems Reported by Older V-A Graduates and Older Institute Graduates in Taiwan in 1989.
表三十二. 農校及農專早期畢業生對解決農事問題之資訊及協助之來源

Source 來 源	Graduates 畢業生	Occas. & Freq. 有時及經常 Percent 百分率
Other Farmers	V-A (n=169) 農校(下同)	71.0
其他農民	Inst (n=9) 農專(下同)	55.6
Farmer Associations	V-A (n=16)	48.3
農會	Inst (n=11)	45.5
Prov. Dept. Agr. & For.	V-A (n=167)	21.6
農林廳	Inst (n=10)	40.0
DAIS/Res. Inst.	V-A (n=166)	42.2
農改場、農試所	Inst (n=4)	40.0
COA/JCRR	V-A (n=158)	17.1
農委會	Inst (n=11)	27.3
Cty./City Gov. Agr. Div	V-A (n=161)	21.1
縣市政府農政單位	Inst (n=10)	20.0
TSC Extension	V-A (n=158)	26.6
台糖推廣單位	Inst (n=11)	9.1
Agr. College/Agr. Inst.	V-A (n=157)	7.6
農學院農專	Inst (n=10)	40.0
V-A Schools	V-A (n=156)	15.4
農校	Inst (n=9)	11.1
Magazines	V-A (n=175)	72.0
雜誌	Inst (n=13)	76.9
Newspapers	V-A (n=168)	54.8
報紙	Inst (n=12)	66.7
Television	V-A (n=166)	50.6
電視	Inst (n=11)	54.5
Radio	V-A (n=155)	34.8
收音機	Inst (n=9)	11.1
Other	V-A (n=130)	42.3
其他	Inst (n=8)	37.5

Source:Data from mailed questionnaires collected in 1989.
來源：數據爲78年問卷中蒐集

* V-A graduates who responded in sample from years 1950, 1955, 1959, 1964, and 1969. Institute graduates who responded in sample from 1964 and 1970.
農校學生畢業於39,44,48,53及58年，農專學生畢業於53及59年

**A four-point scale was used. The responses for "Occasionally" and "Frequently" were combined.
四種尺標中"有時"與"經常"合併

爲數更多之畢業生稱過去曾在某一時間經營農事。14名(42.4%)早期畢業生及25名(25%)之新近畢業生稱過去曾經營農事若干時間。

仍在經營農事者其農場面積與台灣平均農場之面積相當,半數以上爲1.5公頃或接近此數；不到半數者則有2.1公頃或多於此數。多數農場均係自己經營。

經營農事最常遭遇之困難爲運銷及財務上之問題，早期畢業生曾被詢以如何解決其所遭遇之困難，雖然經營農事者僅有11人，但其答案可視作專科畢業生在溝通模式上之一種"建議"。最常接受之協助來自"雜誌"，"報紙"，"電視"及"其他農民"、最少利用之資源以及協助則爲"台糖推廣單位"，"收音機"，"農校"，各項數據見表32.

The frequentcy of using various sources seemed to differ between the V-A graduates and the Institute graduates. The Institute graduates appeared to be more likely to seek information or help from their "mother" school than the V-A graduates were likely to go to their "mother" school. In addition the V-A graduates were more likely to get information from the radio and somewhat more likely to get help and/or information from other farmers.

農校與農專畢業生在尋求各種資源之頻度以解決其農事問題上有所不同，農專畢業生較農校畢業者似更傾向返回"母校"尋求協助而農校畢業生則較偏愛自收音機及其他農民處以期獲得問題之解決。

Chapter VI
第六章

PROGRAMS FOR THE FUTURE: RECOMMENDATIONS
農業專職教育之未來：建議事項

Many changes have been made in the vocational and technical education programs in agriculture in Taiwan during the past forty years. Those changes have been designed to keep the nature and scope of the agricultural education programs appropriate for the agricultural sector of the country and to provide the best opportunities for the youth to enter and succeed in agriculturally related careers.

The recommendations which follow for agricultural education programs are based on this study including the review of literature reported in Chapter II, the study by Ali Ahmad Almutawakel, and other observed changes in agriculture and education in Taiwan and other countries. In addition, the recommendations draw heavily on an address[18] by Meaders at a workshop on agricultural education in Taipei, Taiwan, March 7-8, 1990.

Some of the current concerns for agriculture in Taiwan may be described as (1) keeping agriculture competetive in the international arena for production and marketing; (2) maintaining an adequate, safe food supply for the growing population; and (3) maintaining a healthful environment in rural (as well as urban) areas. Also there are concerns for adaptation of the educational system to the many societal changes which have accompanied the rapid industrialization while maintaining the many cultural traditions which have characterized the Chinese for centuries.

An obvious challenge to educational and agricultural leaders in Taiwan as they plan for the future is to determine what should be the role for the agricultural education institutions in regard to those concerns. Who should be served? What should be the programs?

台灣之農業職業及專科教育過去四十年來有甚大之改變，此等變革乃以保持農業教育之本質及規模以適應國家在農業方面之措施並對青年步入農業領域之職業提供最佳之機會。

對農業教育之各種建議事項乃以本次研究包括第二章中所列文獻之檢討，阿里穆塔瓦克之研究，及在台灣所見農業及教育方面之興革事項，此外，梅德斯七十八年三月七日在台北農業教育研討會中之演講亦爲重要之論證。

當今對台灣農業之關注可歸納爲：(1) 使農業生產及銷售繼續在國際上保持競爭力；(2)在人口不斷成長之過程中能作適當且穩定之糧食供應；(3)促使鄉村（及城市）有一衛生良好之環境，另一關注則爲教育體系對伴隨快速工業化而來之社會變遷之適應性，此一變遷之社會維繫多采多姿之中華文化傳統已達數千年之久。

對台灣教育及農業領導階層人士明顯之考驗爲在今後政策之制定中對上述各項關注，農業教育院校應扮演之角色爲何，何人應接受教育？教育內涵應爲何？

Some Changes in Taiwan
台灣之若干轉變

The population of Taiwan had increased from about eight million in 1950 to over 20 million in 1990, making Taiwan one of the most densely populated areas of the world. Industrialization has proceeded so that in 1990 Taiwan is recognized as the 13th largest trading country in the world.[19] In addition, although agricultural production has increased over the past forty years, it now represents only about 5 percent of the economy and less than 7 percent of the value of the international trade. About 14 percent of the labor force is identified in farming (expected to drop to 8.1 percent by the year 2000); the average age of farmers is over 55; about 140,000 hectares of farm land was reported to be idle in 1990, an increase of 20 percent from 1988; the average size farm was about one hectare; and about 10 percent of the farmers were full-time farmers.[20]

台灣人口自民國39年之約八百萬人遽增至79年已超過兩千萬人，成爲世界上人口密度最大之國家。由於持續之工業化，民國78年列爲世界第十三大貿易國。雖然農業生產超過以往四十年，但在總產值中僅占百分之5，國際貿易額中所占比率不足百分之7，從事農業勞動力約爲百分之14(預計民國89年將更降至百分8.1)；農民之平均年齡爲55歲；79年時據稱有14萬公頃農田廢耕，較上年增加百分之 20；農場面積平均約爲一公頃，專業農民約爲百分之10[20]。

Schooling and Work in Taiwan
就學與就業

One of the issues surrounding the educational system in Taiwan is the examinations which play a key role in determining the specific school and program to be entered by the student. The scores achieved on the examinations are critical determinants for entrance at both the senior middle school level and at the post secondary

levels. Major changes are reported to be underway with an upward shift of compulsary education from the junior to the senior middle school level. Details regarding how this will affect the admissions process, including examinations for the tracked system (academic and vocational), are not available.

Howere, a story in the China Post, August 25, 1990 reported on an experimental program in Taipei involving 800 students, 20 classes, and 20 schools. It was a project designed

> "to determine how a system free of entrance examination will affect teaching at junior high schools, how students' learning will be affected and whether the system will eliminate the need for cram schools, which offer intensive courses for students to pass the competitive entrance exams." [21]

The planned procedures for enrollment of student into the streamed school system are not clear. The experiment reported above appears to be related primarily to the academic stream of schooling.

環繞台灣教育體系爭議之一為決定學生能否進入其理想學校具有關鍵性角色之入學考試，考試所得分數對學生能否進入高中或大學為一決定性因素。據悉國民教育將上延至國中升入高中之階層，有關入學細節，包括對不同體制（高中與高職）之考試等尚待研議。

78年八月25日中國郵報報導，在台北舉辦一項包括20所學校，20個班級及800名學生之研究計畫，其設計為：

> "如果取消入學考試，對國中之教學方法，學生之學習將受何種影響，如此是否可因無入學考試之競爭而不再需要填鴨式之教學[21]"。

學生如何在以智力分班體系中註冊入學等擬議中之辦法尚不明瞭，上述報導殆係針對以學生資賦之差異而予分班教學而發。

An extensive review of the literature about the transition from school to work suggest that "streaming in schools (tracking vs comprehensive) has an effect upon the social organization of schools, and upon the attitudes and experiences of the pupils within them. (West and Newton, 1983, p. 14) [22] Other writers point out the limited role of the school in determining occupational and career attainments by individuals. The school with its teachers, curricula, and resources consititute a limited impact on youth who are also influenced by peers, family, mass media, and societal norms which prevail at the time. Schools should not be compared to manufacturing plants which have direct control over the characteristics of outputs.

In terms of vocational and technical agriculture institutions in Taiwan, both kinds of institutions have an impact upon their students. However, it is not a direct cause-effect relationship for occupational and educational attainments by the graduates.

一廣泛檢討有關由就學至就業間之轉變之文獻認爲"以智力區分教學(分班對混合)在學校中具有社會組織至對學生亦態度與經驗之效應"。另有學者指出學校中少數角色決定個別的職業上之成就。學校中之教師、課程及教學設備等對青少年形成相當程度之束縛，而青少年同時又受同學、家庭、大衆傳播以及社會規範等之影響。學校不能與製造性工廠相比擬，後者對其產品之特質有直接之控制權。

就農業職校與農業專科言，兩者均對其學生具有束縛力，但對畢業生不致在教育與就業之成就上形成直接之因果關係。

From an individual's point of view, the problems arising from modernization and industrialization in societies, are described in a 1975 report as

> "In traditional societies, the future of most individuals was along well-trodden paths: son followed father, and daughter was destined to be housewife and mother. The destination was known. Now the individual is expected to face an unknown, if more equal, future via a labyrinth of institutions with rigid separations. Urbanization separates home from school, school from work, leisure from factory, retirement from birthplace. The individual must be assisted to make these jumps, and new institutional arrangements are needed to provide transitions among different worlds of experience," (OECD, 1975: p.39) [23]

The industralization and modernization in Taiwan has brought changes in families, in communication networks, in kinds of employment available, in the relationships between students and their schools, in extended periods for youth before entering the work force, and many other changes. It is not surprising that the schools, their curricula, the preparation of teachers, and the support services for teaching must be changed in order to maintain effectiveness. The changes in the policies and programs for the schools will need to be part of other changes in government policies and programs which , together, may maintain improved living conditions and quality of life for the people in Taiwan.

1975年出版之一份報告中，學者對因現代化與工業化對社會形成之困惑有以下之陳述：

> "在傳統社會中，大多數人士之未來均係遵循既成之道路；子女

依父命行事或預期成爲賢妻良母，其終局業已預知。現今則個人所面臨者均爲不可期之未來，更確切言，未來將通過以堅牆圍繞之學院迷宮，都市化分隔家庭與學校，學校與工作，休閒與工廠，退休與家鄉，必須施以援手先克服此等障礙，並需重新安排教育設施於不同經驗之人以提供過渡之方法"。

在台灣，工業化及現代化已使家庭，資訊，職業類別，學生與學校間之關係，青年在待業期以及其他多方面均產生變化。學校、課程、教材及教學設施均須改進以加强教學，此外，政府對教育方面以及關係人民福祉方面之政策亦須改變或加强。

Some Conclusions
結 論

Vocational Agriculture

There have been many changes in the vocational agriculture programs and enrollments during the period 1975-1989. Enrollments have increased, more females are enrolled, some schools are no longer offering agricultural curricula, and within the past five years there has been a major revision of the agricultural curricula. There was an increase in the amount of time for general subjects; and increase in the time for the science, or related professional subjects; and a major increase in the amount of time for the professional subjects (subjects primarily in the major field); an increase in the time for electives; and a major reduction in the time for professional practice, or laboratory/practice.

The specialized, one-school offering for the sericulture curriculum was maintained and the curriculum strengthened. One school continued an emphasis on tea, production through processing and marketing, but the emphasis was not recognized as a specific curriculum. Rather, it was an emphasis through elective courses and as parts of other curricula.

The Farm Management curriculum, offered through fifteen schools in thirteen of the counties, perhaps represents the greatest shift in concepts about what ought to be in the senior vocational school level curricula. It is a rather comprehensive agricultural curricula with instruction in theory and practice which covers production of selected economic plants and animals. It incorporates instruction with practical application from the plan to the harvest and market of crops and animals: field crops, vegetables, fruits, livestock and poultry. Flexibility has been provided for teachers at local schools to develop elective courses and to adapt practical applications through use of locally important agricultural enterprises.

農業職業學校

在民國64－78年期間農業職業教育之規劃與實施以及規模均有甚多之改變，入學人數增多，有較多之女生入學。某些學校取消農科，農業科別過去五年來亦大重之調整。普通學科，自然學科或相關之農業學科教學時數均行增加；專業學科及選修科目時數亦行增加，專業學科實習或實驗室/農業實習時數減少。

僅有一校設置具有特色之蠶絲科仍續維持並予加強，另校對茶業之教學自栽培至加工、銷售續予加強，但並未設置專業科別，列爲選修課附於他科之中。

農場經營科在十三個縣市中有十五所農校設置，或可代表對高農應設科別觀念最大之轉變，農經科爲一綜合性之農業科別，理論與實際並重，涵蓋若干經濟作物及動物之生產，自規畫至收獲、銷售包括農作物、蔬菜、果類、家畜及家禽。各個地區可因地制宜，配合當地資源開設若干選修課程。

The enrollment practices for entrance to the farm management curriculum have been linked to interest in, and opportunity for, careers in production agriculture. Special scholarships have been provided for the youth; and entrance has been possible through routes other than the traditional examination process. Finally, the sixth(or last)semester has been used for supervised experiences on farms and for the concurrent development and refinement of plans for getting started in farming.

The revised farm management curricula appears to have many characteristics which commend it to planners for adaptation to other curricula. It still lacks sufficient balance in terms of applied instruction for financing and marketing agricultural products; and could be strengthened in terms of general required instruction related to agriculture and the environment, and nutrition and health.

The principals in schools with vocational agriculture programs were positive about the changes which had been made in all of the agricultural curricula. However, there was much need for organized assistance with implementation of the revised curricula and methods of instruction. The amount of school land was ample at a few schools but more than one-half of the schools needed additional land for demonstrations and student practice, especially for the production related curricula.

Although many schools reported both new and obsolete equipment, there was an ever-present need to replace equipment so that students could learn through

the use of up-to-date tools, power sources, and machinery. In general, the schools with Food Processing curricula indicated their equipment was satisfactory.

進入農經科之學生入學時查驗其農場技術，關係於生產性農業未來之就業，青年可在聯合招生以外以甄試辦法入學，并有助學金以資挹助，第六(最後)學期以農場實習爲主并訂定準備從事之農事經營計畫。

經過調整之農場經營科具有多項特質可作其他科別之借鑑，但課程方面農產運銷，財務經理等仍待加强，似宜與農業與環境，營養與健康等關連性課程作爲一般必修科目。

農業職業學校校長對於過去各個科別之調整具有主導作用，但需給予有效的支持使能完成各項關於教學之調整、改進工作。學校校地少數學校尚足數用，但半數以上需要更多土地作爲學生實習之用，尤其對於農業生產有關之科別更爲迫切。

多數學校均須增添設備以加强實習實驗，惟食品加工科則尚稱滿意。

The livestock and poultry available for instructional purposes, although improved since 1975, appeared to be inadequate. The management of the livestock and poultry at the schools often did not reflect the same priority which is placed on swine, poultry, and dairy cattle in the economy of Taiwan.

Most of the vocational agriculture graduates were employed. Most of the more recent graduates (1982 and 1984)were employed in the private sector while most of the older graduates(1969 and earlier)were mainly employed by Government. About 40 percent of the graduates were employed in agricultural occupations, including farming and other agricultural occupations in both the public and private sector. When the employment of vocational agriculture graduates in 1989 was compared with employment of the same graduates at three previous in time (1962, 1968, and 1975), it appeared that the pattern of employment had not significantly changed.

The reported sources of information and /or help on farming problems indicated that both the older and more recent graduates both look to other farmers as a key source of information and/or help. The mass media(magazines, television and newspapers), except radio, also were frequent sources of help. The V-A schools were also sources of help, more frequently for the recent graduates than for the older graduates. The agricultural colleges and agricultural institutes were seldom sources of information and/or help for the older graduates but were more frequently used as sources of help by the more recent graduates.

為教學目的飼養之禽畜雖自64年後有所改進，但仍待充實，學校中禽畜飼養管理之情形未能反映畜牧事業在台灣經濟發展之重要性。

大多數農校畢業生均已就業，新近畢業者(71及73)多在私人機構中，而早期畢業者(58年及更早期者)則多任職政府機關。約有百分之40之畢業生從事農業性職業，包括經營農事及其他有關行業之公私營單位。比較78年與前三個年期(51、57及64年)農校畢業生之就業情形，顯示其就業模式無重大改變。

依據資料，早期及近期畢業生均視其他農民為協助解決農事問題之主要來源。大衆傳播媒體(雜誌、電視及報紙)除收音機外亦常為協助之來源。新近畢業生較早期畢業者常依農校、農業大專院校協助解決農事問題。

The more recent graduates who were engaged in farming clearly indicated interest in continuing their education regarding farm management. In addition, as a group, the recent graduates gave strong support to the policy for vocational agriculture schools to offer classes for farmers.

Farmer education and community service have been for many years a part of the overall goals for the schools with vocational agriculture programs. The schools have provided graduates who entered the Extension services through organizations such as the Farmer Associations and Taiwan Sugar Corporation. Other graduates have entered agricultural positions in research institutes, improvement stations, and agribusinesses. In addition, the schools have continued to provide special classes for farmers. The greatest amount of emphasis in classes during the years 1986-1988, was placed on classes related to various aspects of agricultural mechanization.

Undoubtedly the schools have played an important role, through their graduates and through their classes for farmers, in the rapid shift from traditional agriculture to modern agriculture.

It was noted that some schools have offered classes in the area of leadership training (agricultural speech training); and one school offered a class on swine waste treatment. However, few classes were offered in the prominent problem area of correct use of agricultural chemicals, water quality, and rural health.

新近畢業生就業者，常以經營農事為業。充分顯示願意繼續所修讀之農業經營。此外，就整體言，新近畢業生強烈支持農校對農民開設講習班。

農民教育與農村服務多年來即爲農職學校重要推行之施政之一，農校畢業之學生進入農會，台灣糖業公司等機構從事推廣工作。亦有畢業生進入農試所，改良場，農企業機構從事農業性工作。此外，農校曾連續對農民舉辦多種專業性講習班，民國75－77年間在農業機械方面曾舉辦大規模之講習。

農校確曾通過其畢業生,講習班在服務農民上扮演重要角色,使傳統性農業迅速轉變爲現代化農業。

某些農校曾辦理領導人才之訓練班(農業課題演講訓練)另有一校舉辦豬舍廢棄物處理講習,亦有辦理重要項目如農藥之正確使用,水質淨化及鄉村衛生等之講習。

Technical Agriculture

The institutions providing technical agriculture instruction, at Chiayi and Pingtung, serve as a vital link in the agricultural and educational systems. They provide opportunities for senior graduates from both the vocational schools and academic schools to continue their education for careers in agriculture. (One of the schools has a program for admitting junior middle school graduates directly into a five-year program.)

Many of the graduates from the institutes enter agriculture and agri-business, and thereby have opportunity to provide leadership in semi-professional and technical positions. About one-fifth of the graduates contiune their education at other institutions after graduation from the agricultural institutes.

The graduates from the technical agriculture institutes constitute about three percent of all technical institute graduates in Taiwan. However, they constitute nearly sixty percent of all the postsecondary graduates in agriculture.

The technical agriculture programs were seen to be very dynamic as a part of the educational system. First, a long-time senior vocational agriculture and industry school at Ilan was upgraded in 1989 to a National Institute of Industry and Agriculture. Second, the National Pingtung Institute of Agriculture had a major expansion program will underway with anticipated approval from the Ministry of Education to become a technical college in agriculture with authority to offer a baccalaureate-degree. And third, both the Chiayi and Pingtung institutes were giving more emphasis to extension-type services to both farmers and the agri-business industries.

農業專科學校

分別設立於嘉義及屏東之兩所專科學校實施農業技術教育，形成農業與教育間重要之溝通管道，招收來自普通高中及高級職校畢業學生，畢業後從事農業性職業(其中一校設有五年制，直接招收國中畢業生)。

爲數衆多之兩校畢業生，進入農業、農企業，在半專業性及技術性職位居於領導地位，約有五分之一之畢業生畢業後復行進入其他大學院校繼續進修學業。

兩所農業專校畢業生人數占全台灣技術專科畢業生數約百分之三，而占農業大專院校畢業生人數近百分之六十。

農業專科教育在教育體系中具有充分之活力。首先，位於宜蘭有悠久歷史之農工職業學校於民國78年升格爲國立宜蘭農工專科學校，其次，國立屏東農業專科學校獲得教育部核准實施一有規模之擴充計畫改制爲農業技術學院。畢業生授予學士學位。第三，兩所農專行將加强對農民及農企業之推廣性服務工作。

The breadth of the curricula available to students in the institutes has been expanded since 1975. However, most of the students (nearly 70%)were enrollecd in eight of the 21 available curricula. The flexibility which the Institutes have for making changes in the curricula and supporting courese, provide an excellent basis for rapid adjustment to changing needs in the areas of agriculture, agri-business, and natural resources.

The enrollment of females in the technical agriculture programs appeared to be characterized by two condititons: First, about two-fifths of the females were enrolled in the evening programs while only one-fourth of the total institute enrollment was in the evening programs; and second, about 70 percent of the total enrollment was in eight curricula and those same eight curricula enrolled about 70 percent of the females.

The research and extension activities conducted by the institutes provide the basis for adding to the pool of knowledge; extending the expertise of institute faculty to helping solve problems in farming and agri-business; and keeping faculty aware of the real problems being faced by farmers and businessmen.

The institute graduates expressed interest in continuing their education. There appears to be a strong base for lifelong education programs to be planned and conducted by the institutes.

民國64年後兩所專校設科類別予以擴充，多數學生(約70%)就讀於21個科別中之八科，兩所專校對設科類別及配置課程之機動調整，對農業，農企業及自然資源等面人力之需求能作有效之配合。

女生就讀農業專校有兩種特殊情況：第一，約有五分之二之女生就讀於夜間部，而夜間部學生人數僅占全體人數之四分之一。第二，約有百分之七十之學生就讀八科之中，而該八科中女生占百分之七十。

研究與推廣工作有助於知識之累積；使教師益行精進以協助解決農事、農企業問題；並對農民及企業人士所遭遇之問題更能深入瞭解。

兩所農專畢業生咸表示願意繼續深造，學校對如等鮮終生教育計畫似已有堅強之基礎。

Recommendations for Vocational Agiculture Programs 對農職教育建議事項

The recommendations for the vocational agriculture programs have been divided into four areas:

--Purposes of the Schools
--In-service Education and Research
--Farmer Education
--Other Adult Education

The Purposes of the Schools

The V-A schools should be centers for agricultural and natrual resources education for youth and adults. This should include both education in agriculture and education about agriculture.

1. Education in agriculture. The curricula should include core courses which deal with public policy, environmental and resource management; nutrition and health; and agri-business marketing and management in the domestic and global economy. Production should not be neglected but it should not dominate in any of the curricula. [24]

2. Education about agriculture.

   a. The teachers and facilities at the V-A schools should become a resource for primary, middie and high schools for helping those students learn

about agriculture. In addition, the schools should work with representatives of agri-business, and other community groups to help general citizens learn more about the importance of agriculture in the society and economy. The focus of this effort should be to assist with achieving agricultural literacy for the citizens. Additional resources will be needed to support the teachers in this effort; and it will require government officials and leaders in both the Ministry of Education (MOE) and the council of Agriculture (COA) to direct efforts to strengthen agricultural literacy through programs of the Provincial Department of Education (PDE) and Provincial Department of Agriculture and Forestry (PDAF) .

b. Experimental programs should be organized at selected non-agricultural colleges and universities for the purpose of developing courses to incorporate agrcultural literacy in the liberal arts. The issues of agriculture are exceedingly important to the proper nourishment of the growing population of the world; the issues provide an opportunity to link the primary objectives of the liberal arts which include developing an appreciation of the cultural heritage of human civilization; and the issues of agriculture provide a substantive basis for linking "thinking" about an issue with "experiencing" an issue.[25] [26]

對於農職教育方面之建議事項分爲四部份：

---農業職校之目標
---在職教育與研究工作
---農民教育
---其他成人教育

農業職校之目標

農業職業學校應作爲青年及成人之農業與自然資源教育中心，應包括農業本體教育及與農業有關之教育。

1. 農業本體教育所設科別應涵蓋政府政策，環境與資源之管理;營養與健康;有關國內外之農企業運銷與管理等方面之核心課程,生產性者亦不應忽視但在各個科別中所占比例不能偏高。

2. 與農業有關之教育

a. 農校之教師與教學設備應作爲協助中小學校學生學習農業之教學資源。此外，學校亦應結合農企業界及其他地方社團教導一般人士對農業在社會、經濟等方面之重要性作進一步之認知。此

項工作應以輔導一般人士對農業作啓蒙性之瞭解爲主，教育部，農委會應透過教育廳，農林廳訂定之計畫直接參與此項工作外，並應對農科教師就教學資源及活動之方便上予以支援。

b. 選定非農業院校，安排實驗性計畫，期使初步之農業知識能融入人文社會科學之中。農業問題對孕育成長中之一代具有無比之重要性，因其能貫通人文社會科學包括發展對人類文明中文化遺產之評估之基本目標；並建立對某一問題連繫"思索"與"經驗"間之重要基礎。

In-service Education and Research

An Agricultural Education Research Institute should be established to provide leadership for in-service education and research as well as perform other funtions.

1. An Agricultural Education Research Institute (AERI)could provide leadership for curriculum design, staff development, research on agricultural and extension education, coordinate technical and professional in-servce education programs, help conduct program evaluation, prepare instructional materials for formal and nonformal education, and other functions.

2. Teachers and administrators in V-A schools should be provided opportunities for conducting research about agricultural education and regular participation in in-service education. An AERI could be used as a means for advanced study by teachers and administrators.

3. The AERI staff should be available to provide direct help to administators and teachers in V-A programs; and to cooperate with the schools for planning and conducting some of the needed research; and to promote the cooperation between schools and District Agricultural Improvement Stations and Farmers Associations for planning, conducting and evaluating extension programs.

4. Assistance should be given from the AERI special in-service programs related to implementation of the recently revesed curricula for V-A education. Some of the AERI staff should have experise the application of theories of learning to coures and curriculum development as well as application to methods of teaching. [26]

在職教育與研究工作

成立農業教育研究所藉以領導在職教育與研究工作並展現其他功能。

1. 農業教育研究所將領導課程之設計，提供教師進修機會，農業教育與推廣之研究工作，協調技術性與專業性在職教育計畫，指導計畫之評估，對正規及非正規教育準備施教材料及其他功能。

2. 農校行政領導者及教師應能給予從事對農業教育之研究工作並參與在職進修之機會，教研所應視爲教育行政人員及農科教師進修之場所。

3. 農教研究所教師應擔負直接協助農校行政人員及教師推行其計畫之責，並與各校合作從事規畫並指導必要之研究工作；並在各農校，農改場，農會之間加强合作對推廣計畫之製訂，指導及評估。

4. 農教研究所對新近調整科別之執行情形應協助作在職性之研討計畫，教研所之教師應對科別與課程發展學習之理論之實施及教學方法之實踐具備專業知識。

Farmer Education

The Farmer education program should be strengthened in two major ways: First, by extending the systematic instruction for young farmers to the post-high school period with emphasis on management; and second, other farmer education instruction should be continued and expanded in cooperation with the Farmer Associations and the District Agricultural Improvement Stations.

1. A systematic instructional program for young farmers should be developed with focus on management of the farm/production unit enterprises. Record keeping and analysis of the records for improving the mangement decisions should be at the center of the program. It should be an instructional program which combines group and individual instruction; incorporates information from other farm management studies; and has a support network for the instructors so that they may be kept current with farm management theories, government policies, and international market trends.

2. The current farmer education classes which tend to focus on agricultural power and equipment should be expaned to include instruction on problems faced by farmers in such other areas as agricultural chemicals and the food chain; agricultural wastes and environmental quality; cooperative marketing; farmer nutrition and health and others.

3. Cooperation with the Farmer Associations, DAIS, and agri-business firms should be continued and strengthened .

農民教育

農民教育實施計畫應在兩方面加強： 第一、延伸已制度化之對青年農民講習至高中畢業後之程度，將重點置於管理方面；第二、其他形式之農民教育講習應與農會及當地農改場合作繼續實施。

1. 對青年農民系統化之講習應繼予實施並將重點置於農場生產單元之企業，記帳及帳務分析作爲經營改進之決定應爲計畫之中心工作，講習計畫應是集體與個人講習之組合；與其他農場經營研習之資料互相融通；講師間亦建立一互相支援之網路，使均能掌握當代對農場經營之理論，政府之政策及國際間行銷之趨向。

2. 現今農民講習班傾向集中在農業動力及設備方面，應擴及農民面臨之困難之若干其他事項，諸如農用藥劑及食物鏈；農業廢棄物與環境品質，合作運銷；農民之營養與健康等。

3. 與農會、農改場及農企業公司之合作應繼續維持並加强。

Other Adult Education

The educational resources (teachers and facilities) for the vocational agricultural programs should be utilized to provide adults with additional and/or updated skills for vocational and avocational purposes.

1. The Food Processing and Rural Home Economics facilities should be used to help teach adults the modern practices and skills in such areas as food preservation, preparation, meal planning, nutrition and health, child care. Topics such as these should be developed through needs assessments carried out by the faculty and others interested in conducting the instruction.

2. Other departments should also develop classes for adults which are based on needs assessments. The incresing level of living, the increased disposable income enjoyed by many urban people, as well as rural residents, provide the basis for expansion of adult education programs.

3. New policies related to self-supported and partially subsidized adult classes should be developed. Part of the additional subsidization of adult education should be in the form of a new positition such as Director of Adult

Education (or Coordinator of Adult Education). The increased affluence of the people in Taiwan should make it appropriate for class participants to pay, through enrollment fees, all or major portions of the costs for such classes.

其他成人教育

農業職業教育之教學資源(教師與設備)應對成人以就業及非就業目的施以新穎技術之培訓中充分利用。

1. 食品加工及家政方面之設備應用於成人教育就新穎之技術如食品貯存，膳食計畫，營養與健康，兒童保育等方面之施教實施前應由教師及有關人士就講習項目之需要性事先評估後再作選定。

2. 其他科別亦應就其需要，事先評估後開設成人講習班，城鄉居民生活水準提升，收入增加，使成人教育之內容不斷擴增。

3. 成人講習班由參加者自行繳費或僅予部分補助之辦法今後應試予推行，部分之補助可用於設置講習班主任(或講習班幹事)，當國民日漸富裕，參加講習班之學員繳付若干費用亦屬允當。

Recommendations for Technical Agriculture Programs
對農專教育建議事項

The technical institutes in aguiculture in Taiwan serve a vital purpose in the human resource development efforts in Taiwan. They serve to provide individuals opportunities to prepare for careers in the broad spectrum of positions which are in the agriculture and agri-business fields, technical positions from production through marketing, processing, research, and policy development.

The recommendations have been dividid into two areas: curriculum and extension. Other areas could have been identified but it was decided to focus the recommendations around only two critical areas.

curriculm

The curricula should reflect the emerging areas of emphasis for strengthening agriculture and natural resources in Taiwan as well as the traditional areas with up-to-date emphases.

1. The five-year program at National Chiayi Institute of Agriculture should be

thoroughly reviewed in light of the major changes taking place in the educational system as the level of compulsary education is raised from junior middle school to senior middle school. The resources assigned to the five-year program might be better utilized through expanded two-year programs, and through additional continuing education (see below for additional details).

2. The leadership roles of the graduates from the Institutes may be enhanced through the experiences which they have while students in the Institutes. Those experiences should include systematic instruction on (a) the environmental impact of practices which are recommended, (b) the international dimension of agricultural product markets, and (c) the agricultural policies at the provincial and national levels: their philosophical basis and their relationships to other economic and social policies. Consideration should be given to the extent to which the above suggestions may be integrated into existing courses and the extent to which new courses may be required which serve students from several of the curricula.

3. If the National Pingtung Institute of Agriculture is promoted to a National Technical College of Agriculture, then the new institute at Ilan and the present institute at Chiayi should review their curricula to determine whether some of the curricula previously offered by the Pingtung Institute should be offered by the other insititutes.

農業專科學校對台灣人類資源之開發負有重要之任務，在農業，農企業範疇及工藝職位中自加工，行銷，研究及策略之發展等方面廣闊之職業層面中提供個人就業之機會。

建議事項着重於科別與推廣兩方面。

科 別

科別與課程應反映加强台灣農業與自然資源已突顯之地區之重要外，並應兼顧傳統地區現代化之重要性。

1. 由於國民教育擬議由國中延伸至高中階段，嘉義農專之五年制應着眼於此一重要之改變予以充分檢討。五年制之各種教學資源可轉移至擴充後之二年制及延長之國教予以更佳之運用。

2. 農專畢業生之領導角色應透過學生時代之經驗予以加强，此等經驗包括下列系統化之講述(a)實習環境之狹隘，前已述及，(b)農產品市場之國際銷售空間及(c)省級及中央級之農業政策；其理論

基礎及其他經濟的，社會的政策間之關係，以上建議可統整於現有課程或於某些科別新增課程中。

3. 屏東農專如改制爲技術學院，則新近設立之宜蘭農專及嘉義農專宜重新檢討其科別並決定是否增設屏東農專原設之科別。

Extension

The Institutes which offer agricultural curricula should continue and strengthen their extension services to farmers. In addition, there should be an expansion of offerings to agri-businesses and to public enterprises for the up-dating and up-grading of employees.

1. The basic agricultural extension services are provided through the Farmer Associations. The Institutes, in cooperation with the District Agricultural Improvement Stations, should continue to provide assistance to the extension workers in the Farmers Associations, and to provide farmer training programs. For the special farmer training classes there should be services available to the outstanding, superior farmers, and to the part-time farmers. These will probably require somewhat different approaches for the instructional programs.

2. Perhaps the greater need is for development of continuing education programs to serve the up-dating and up-grading requirements of workers in agri-business, public enterprises and government. This will require some full-time staff and the use of other regular faculty on a part-time basis. The purposes of these continuing education programs should be quite clear: to provide current employees in agri-business, public enterprises and government opportunities to develop new understandings, skills, and/or knowledge. Such programs would require close coordination and cooperation with key persons in the industries, businesses, organizations, and others for whom such programs would be designed. In general, such programs should be self-supporting through conference fees which would cover planning, publicity, registration, and miscellaneous costs.

推 廣

從事農業教學之大專院校應繼續並加强其對農民之服務。此外，更應擴大其服務對象至農企業，公共事業機構藉以提升其員工之素質。

1. 基礎性之農業推廣工作爲透過農會以實施，而所農專在與農改場

合作下應繼續提供對農會推廣人員之協助並推動各項對農民之推廣計畫。對傑出而有成就之農民或兼業農民則應開設專業性訓練班，類此訓練須以不同方式辦理。

2. 在繼續教育計畫中更爲需要者當屬對公私營機關，農企業機構提升其員工素質之訓練。此類計畫需要專業性及部分兼業性人員，訓練目的應是：使任職於上述各類機構中之員工具有新觀念、技術及知識，此等計畫必須與在工商業及政府機構中主管人士，亦即將爲協助計畫之訂定者，取得密切配合，計畫應爲自費性者，自籌備，公告，報到及雜支等開銷之會議實施。

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13. Translated from a report prepared in the process of revision of the curricula. (Add the specific source information!)

14. Based on unpublished data from the 1975 study by Meaders and Hu. There were 30 schools included in that study and it included the Taipei Municipal VI&A school.

15. Both institutions are quite dynamic and making many changes. The National Pintung Institute of Agriculture has published an Institute Guide which provides a brief history of the institution, campus information, departmental listing of course requirements, and support services such as library, computer center, livestock farm, etc. The Pingtung institution was established in May 1954 offering three-year courses for senior high school graduates in three departments: Agronomy, Agricultural Chemistry, and Animal Science & Veterinary Medicine.

    The National Chiayi Institute of Agriculture has published a similar guide for their institution. The Chiayi publication contains a more detailed chronology of the history of the institution which was originally founded in April 1919 and named "Chiayi Agricultural and Forestry Public School." After many changes, it was renamed "Taiwan Provivcial Institute of Agriculture" in March 1965 and offered a five-year program for junior middle school graduates in six departments: Agronomy, Horticulture, Forestry, Food Processing, Aninmal Husbandry & Veterinary Medicine, and Agricultural Engineering.
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16. The data about the number of graduates in agriculture, forestry, and fishery curricula were taken from Educational Statistics of the Republic of China, 1987, pp. 186-196; and the information about the place of agriculture in the national economy was taken from Agricultural Development in the Republic of China on Taiwan: A Graphic Presentation, Council of Agriculture, 1986, pp. 13-14.

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19. The Free China Journal, Vol. VII No. 62, p. 5, August 16. 1990.

20. Based in part on an article titled "Agriculture's face wrinkles" in The Free China Journal, August 9, 1990, page 3. Part of the article was from an interview with Dr.Yu Yu-hsien, Chairman, Council of Agriculture, Executive Yran, Republic of China.

21. Reported in the China Post, August 25, 1990, page 4 (International Airmail edition). The article included information based on a survey conducted among parents, more than 10,000 parents agreed to have their junior high students participate in the experiment which will allow their students to enter senior high schools (after successfully completing junior high school) without having to take entrance examinations.

22. West, Michael and Newton, Peggy. The Transition from School to Work. New York: Nichols Publishing Co., 1983, 221 p.

23. OECD. Education and Working Life in Modern Society. Organization for Economic Co-operation and Development, Paris, 1975.

24. There has been a tendency for agricultural education curricula at all levels and in all countries to have focused primarily on production of food and fiber. Traditionally there has been major emphasis placed on production of field crops and livestock. Due to the nature of agriculture, the international interdependencies for marketing, and the greater concerns for sustainable agricultrue, it is important that the instruction at the senior middle schools be broader than just production oriented. The presence of the nine curricula provide students with choices for professional preparation but the content within each curriculum appears to too narrow as specializations for students at that level.

Consideration should be given to the establishment of a curriculum on Tea: production, processing and marketing. Such a curriculum should be limited to one school located in an area where tea is currently an important enterprise for farmers and the Farmer Associations. This is an example of a product for which there is much international competition for marketing but a product for which there is a rather large domestic market in Taiwan.

25. A national study in the United States has recommended that one of the basic problems for agricultural education in the public schools is that it has been too focused on vocational education, and that vocational education is too much focused on farming or production agriculture. For additional information about those observations and recommendations, which include an emphasis on education about agriculture, the reader is referred to:Underdstanding Agriculture: New Directions for Education by the National Research Council, Committee on Agricultural Education in Secondary Schools, Board of Agriculture. National Academy Press, Washington, D. C., 1988.

26. The decreasing proportion of the population with direct experiences in agriculture, is cause for concern regarding the understandings of the general population about farming or production of crops and livestock. Persons who enter key positions for public decision-making need to have an understanding of the relationships between human nutrition, the food systm, and international trade and relations. An experimental program was sponsored by the W.K. Kellogg Foundation in 1976 "to encourage the incorporation of education on food/agriculture/natural resources in liberal arts curricula." For details regarding that effort, the reader is encouraged to read Cultivating Agricultural Literacy: Challenge for the Liberal Arts, edited by Gordon K. Douglass, and published by the W.K. Kellogg Foundation, Battle Creek, Michigan, U.S.A. (2nd Edition, Revised and Reprinted June 1985).

27. For another view about the roles of educational institutions in agricultural education, the reader is referred to the articles by Gordon I. Swanson, University of Minnesota, St. Paul, MN published in The Visitor, Summer 1989 ("The future of agricultural education: A view from the bleachers, Part I") and Fall 1989 ("... Part II") One of the points of view expressed is that the proprietary mode taken by Land Grant colleges of agriculture in the U.S. has been detrimental to the health of the presentday programs at all levels. He argues for agricultural education to "function as a single revenue..." That is an argument for coordination in attainment of goals by professionalism and leadership from the people in institutions and agencies.

28. The field of agricultural education has a long history of using problem solving

methods as the basis for teaching. The science of agriculture has undergirded the instructional program but the methods have been centered around application of the science to the practices of production through to marketing. An article in a recent issue of research journal adds new strength to old arguments. The article may be found as "Anchored instruction and its relationship to situated cognition" Educational Researcher, August-September 1990, p. 2-10.

Appendix I

Additional Tables of Data from the Research
本計畫中有關之若干資料

Table A. Enrollment by Curriculum, Year in School, and Gender in Taiwan Vocational Agricultrue Programs, 1988-89.
農校依科別、性別、年級之入學人數(77學年度)

Table B. Occupations of Parents of 1988-89 Vocational Agriculture Students by School.
農校學生依校別之家長職業類別(77學年度)

Table C. Taiwan Farm Population by County and City, 1987.
台灣依縣、市別之農業人口(76年)

Table D. School Land and Its Use: Taiwan, 1988-89.
校地及其應用(77～78年)

Table A. Enrollment by Curriculum. Year in School, and Gender in Taiwan Vocational Agriculture ;Programs, 1988-89.
農校依科別、性別、年級之入學人數(77學年度)

Curriculum 科別	1st Yr. 一年級			2nd Yr. 二年級			3rd Yr. 三年級			Total 總計		
	Male 男生	Female 女生	Total 總計	Male 男生	Female 女生	Total 總計	Male 男生	Female 女生	Total 總計	Male 男生	Female 女生	Total 總計
Farm Management* 農場經營	720	212	932	739	227	966	718	204	922	2,177	643	2,820
Horticulture 園藝	141	315	456	179	318	497	169	226	395	489	859	1,348
Forestry 森林	157	87	244	169	0	169	182	0	182	508	87	595
Food Processing 食品加工	307	1,023	1,330	321	1,097	1,418	325	1,131	1,456	935	3,251	4,204
Ani. Husb. & Vet. 畜牧獸醫	614	253	867	586	246	832	675	194	869	1,875	693	2,568
Agr. Civil Engr. 農業土木	198	71	269	204	59	263	171	58	229	573	188	761
Agr. Machinery 農業機械	965	45	1,010	901	21	922	1,031	2	1,033	2,897	68	2,965
Sericulture 蠶絲	17	39	56	11	42	53	22	31	53	50	112	162
Rural Home Econ 農村家政	0	827	827	0	850	850	0	787	787	0	2,464	2,464
Total 總計	3,119	2,872	5,991	3,110	2,860	5,970	3,293	2,633	5,926	9,522	8,365	17,887

Based on reports from schools.
依據各校所報資料

*Includes the enrollment in Agronomy at Chiatung.
包括佳冬農校之農藝

Table B. Occupations of parents of 1988-89 Vocational Agriculture Students by School.
農校學生依校別之家長職業類別

School 學校	Parent Occupation 家長職業																	
	Agric 農		Industry 工		commerce 商		Profess 專業		ov./Educ. 公教		Pol/Military 軍警		Other 其他		Unknom 不詳		Total 總計	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Taoyuan Un&I 桃園農工	272	39.02	181	25.97	102	14.63	0	0	37	5.31	2	0.29	103	14.78	0	0	697	100
Miaoli VA&I 苗栗農工	324	35.37	350	38.21	108	11.79	8	8.00	85	9.28	5	0.55	2	0.22	42	4.59	916	100
Hualien V-A 花蓮農校	572	50.66	218	19.31	143	12.67	2	0.18	110	9.74	15	1.33	69	6.11	0	0.00	1.129	100
Taichung V-A 台中農校	648	45.80	251	17.74	279	19.72	0	0.00	98	6.93	0	0.00	139	9.82	0	0.00	1.415	100
Yuanlin VA&I 員林農工	865	52.05	319	19.19	308	18.53	10	0.60	89	5.35	8	0.48	32	1.93	31	1.93	1.662	100
Tainan V-A 台南農校	548	34.60	536	33.84	332	20.96	24	1.52	86	5.43	3	0.19	55	3.47	0	0.00	1.584	100
Lungtan VA&I 龍潭農工	611	66.56	47	5.12	38	4.14	0	0.00	41	4.47	43	4.68	122	13.29	16	1.74	918	100
Kwansi V-A 關西農校	435	51.91	185	22.08	94	11.22	3	0.36	59	7.04	2	0.24	55	6.56	5	6.50	838	100
Wufeng VA&I 霧峰農工	491	33.36	430	29.21	306	20.79	15	1.02	102	6.93	14	8.95	89	6.05	25	1.70	1.472	100
Humei VA&I 虎尾農工	453	70.78	38	5.94	91	14.22	1	0.16	34	5.31	1	0.16	22	3.44	0	0.00	640	100
Peikang VA&I 北港農工	282	81.98	8	2.33	27	7.85	2	0.58	19	5.52	0	0.00	6	1.74	0	0.00	344	100
Tungshih VA&I 東石農工	82	56.94	19	13.19	24	16.67	2	1.39	13	9.03	0	0.00	4	2.78	0	0.00	144	100
Minghsiung ACAD 民雄高中	262	49.25	98	18.42	110	20.68	2	0.38	37	6.95	4	0.75	18	3.38	1	8.19	532	100
Tsenwen VA&I 曾文農工	172	34.54	166	33.33	74	14.86	1	0.20	33	6.63	2	0.40	38	7.63	12	2.41	498	100
Peimen VA&I 北門農工	160	37.04	95	21.99	95	21.99	3	0.69	21	4.86	0	0.00	58	13.43	0	0.00	432	100
Chisan VA&I 旗山農工	432	53.40	158	19.53	122	15.08	4	0.49	53	6.55	8	0.99	24	2.97	8	0.99	809	100
Kangshan VA&I 岡山農工	60	14.42	187	44.95	94	22.60	1	0.24	29	6.97	4	0.96	37	8.89	4	0.96	416	100
Chiatung V-A 佳冬農校	852	59.50	168	11.73	186	12.99	4	0.28	97	6.77	22	1.54	81	5.66	22	1.54	1.432	100
Neipu VA&I 內埔農工	373	78.69	19	4.01	17	3.59	3	0.63	32	6.75	20	4.22	8	1.69	2	0.42	474	100
Total 總計	7,894	48.28	3,473	21.24	2,550	15.59	77	0.47	1,075	6.57	153	0.94	962	5.88	168	1.03	16,352	100

Soruce: Reports received from the schools during March-May, 1989
依據各校所報資料(78年)

Note: Two schools did not submit reports. Reports from three schools were excluded because they had included both industrial and agriculture students.
有兩校未報資料、三校將農、工科學生人數混計，未予列計

Table C. Taiwan Farm Population by County and City, 1987.
台灣依縣市別之農業人口(76年)

City/County 縣/市	Population 人口		Percent Farm Pop.* 農業人口百分率	
	Total 總數	Farm 總農	Total Pop 依總人口計	By Area 依面積計
Total 總 計	19,672,612	4,068,380	20.68	100.00
Taipei City 台北市	2,637,100	33,389	1.27	0.82
Kaohsiung City 高雄市	1,342,797	30,156	2.25	0.74
Taipei County 台北縣	2,800,881	137,473	4.91	3.38
Ilan County 宜蘭縣	447,467	140,101	31.31	3.44
Taoyuan County 桃園縣	1,259,503	222,755	17.69	5.48
Hisnchu County 新竹縣	366,610	159,393	43.48	3.92
Miaoli County 苗栗縣	546,004	216,340	39.62	5.32
Taichung County 台中縣	1,183,490	339,744	28.71	8.35
Changhwa County 彰化縣	1,229,411	517,586	42.10	12.72
Nantou County 南投縣	533,601	242,185	45.39	5.95
Yunlin County 雲林縣	775,588	418,896	54.01	10.30
Chiay County 嘉義縣	588,896	256,569	45.91	6.31
Tainan County 台南縣	1,006,366	382,053	37.96	9.39
Kaohsiung County 高雄縣	1,083,145	271,071	25.03	6.66
Pingtung County 屏東縣	894,652	335,065	37.45	8.24
Taitung County 台東縣	267,363	103,243	38.62	2.54
Hualien County 花蓮縣	355,383	93,344	26.27	2.29
Penghu County 澎湖縣	99,006	35,045	35.40	0.86
Keelung City 基隆市	348,541	4,278	1.23	0.11
Hisnchu City 新竹市	309,899	27,046	8.73	0.66
Taichung City 台中市	715,107	49,760	6.96	1.22
Chiayi City 嘉義市	254,875	19,735	7.74	0.49
Tainan City 台南市	656,927	33,150	5.05	0.81

Surce: Taiwan Agricultural Yearbook. 1988 Edition. p. 294
台灣農業年報78年

* Percent Farm Population represents of total should be read: The farm population is 1.27% of the total population in Taipei City By Area should be read: The farm population in Taipei City is 0.82% of the total farm population of Taiwan.
依總人口計之農業人口百分率應是：台北市之農業人口占台灣總人口之1.27%.依面積計應是：台北市之農業人口占台灣總農業人口之0.82%

Table D. School Land and Its Use Taiwan, 1988-89
台灣農校之校地及其利用(77年)

School 學校	Hectares 公頃	Campus & Buildings 校區與建築	Percent 百分率
Ilan VA&I 宜蘭農工	191.00928	10.6459	5.57
Taoyuan VA&I 桃園農工	38.2918	18.6915	48.81
Miaoli VA&I 苗栗農工	15.1573	10.0573	66.35
Hualien V-A 花蓮農校	129.2148	19.0148	14.72
Taichung V-A 台中農校	13.156	7.5458	57.36
Yuanlin VA&I 員林農工	20.0972*	NA	
Tainan V-A 台南農校	33.23	15.68	47.19
Taitung VA&I 台東農工	No Report		
Lungtan VA&I 龍潭農工	17.3514	11.1268	64.13
Kwansi V-A 關西農校	7.3229	4.576	62.49
Tahu VA&I 大湖農工	9.0142	1.5755	17.48
Wufang VA&I 霧峰農工	4.4483	3.0827	69.30
Huwei VA&I 虎尾農工	7.1119	7.0015	98.45
Hsilo VA&I 西螺農工	8.6845	8.4507	97.31
Peikang VA&I 北港農工	11.78	7.906	67.11
Tungshin VA&I 東石農工	10.8888	4.7618	43.73
Minghsiung Comp 民雄高中	14.0143	12.6143	90.01
Tsenwen VA&I 曾文農工	13.4851	7.2916	54.07
Peimen VA&I 北門農工	11.4423	7.2867	63.68
Chishan VA&I 旗山農工	12	NA	
Kangshan VA&I 岡山農工	10.7202	NA	
Chiatung V-A 佳冬農校	12.0558	8.6808	72.01
Jenai V-A 仁愛農校	29.991	4.939	16.47
Neipu VA&I 內埔農工	11.2891	2.4994	22.14
Total 總計	420.6497	162.7822	38.70
Average 平均	27.4713	8.0198	56.46
Maximum 最大	191.0928	18.6915	98.45
Minimum 最小	4.4483	1.5755	14.72

Source: Data collected from the schools during February-March 1989.
資料於78年2～3月蒐集

*Excludes area for campus and buildings.
校區建築除外

NA =Not Available. 無資料

Appendix II

Personnel and Institutions Assisting with the Research
協助研究計畫之機關與人員

Table E. Names and Titles of People Assisting with Research Project.
協助研究計畫之人員姓名及職稱

Table F. Names of Cooperating Institutions and Key Persons at Institutions for Conducting the 1989 Research Project.
與本研究計畫合作之機關及其負責人員

Table E. Names and Titles of People Assisting with Research Project.
研究計畫人員姓名及職稱

Position	Name/Institution
Directot 執行人	Dr. O. Donald Meaders, Professor, Department of Agricultural and Extension Education, Michigan State University (MSU); and Visiting Professor, College of Agriculture, National Chung Hising University, (NCHU)Taichung, Taiwan. 梅德思博士，美國密西根州立大學農業及推廣教育系教授 國立中興大學客座教授
Co-Director 同執行人	Hu Chi-ho, Professor, Agricultural Education, College of Agriculture, National Chung Hsing University, Taichung, Taiwan; and Professor, Food Science Department, NCHU. 胡啓和教授，農業教育，國立中興大學食品科學系
Research Assistants & Translators 研究助理及譯員	Ali Mutawakel, PhD candidate, Department of Agricultural and Extension Education, MSU. 穆塔瓦克，密西根州立大學農業及推廣教育系博士班研究生 Li Shou-hwai (Sandy), Junior, Department of Foreigh Language, Tunghai University, Taichung, Taiwan. 李秀惠，東海大學外文系三年級 Lai Tsui-yuan (Chrisy), Senior, Department of Western Language, Providence University, Taichung, Taiwan. 賴翠媛，靜宜大學四年級
Research Clerks 研究助理員	Chen Huei-han (Shelly), Junior, Department of Western Language, NCHU. 陳卉翰，中興大學外文系三年級 Li Huei-chen (Debbie), Junior, Department of Western Langage, NCHU. 李惠貞，中興大學外文系三年級 Oi Su-huei (Sue), Junior, Department of Western

Language, NCHU.
歐素惠，中興大學外文系三年級
Tsai Chin-yu (Anne), Junior, Department of Western Language, NCHU.
蔡青育，中興大學外文系三年級

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	歐陽永泰，農業委員會行政助理

Table F. Names of Cooperating Institutions and Key Persons at Institutions for Conducting the 1989 Research Project.

與本研究計畫合作之機關及其負責人員

School 學校	Principal/President 校 長	Person Responsible 負責人
Ilan A&I Inst.	Tsao, Yi-soong	Huang, Hui-wu
宜蘭農專	曹以松	黃惠婿
Taoyuan VA&I	Lu, Li-fwu	Chao, Cheng-kuei
桃園農工	呂理福	趙正貴
Miaoli VA&I	Liang, Ta-tso	Wang, Syh-hua
苗栗農工	梁大則	王汜華
Hualien VA	Liao, Min-tang	Yu, Kuo-chiang
花蓮農校	廖名塘	余國強
Taichung VA	Shen, Cheng-fan	Chen, Ching-shih
台中農校	沈征帆	陳金石
Yuanlin VA&I	Luo, Li-hen	Lin, Chin-yun
員林農工	羅力恆	林清雲
Chiayi Ag Inst	Lin, Chung-mao	Hsieh, Chih-chung
嘉義農專	林中茂	謝志忠
Tainan VA	Chiang, Tsuo-hsien	Lin, Chin-ho
台南農校	江佐賢	林清和
Pingtung Ag Inst	Wu, Kung-hsien	Wu, Te-mei
屏東農專	吳功賢	吳德美
Taitung VA&I	Fwu, Ching-shun	Lin, Yao-pin
台東農工	傅清順	林耀濱
Lungtan VA&I	Yang, Kung-chang	Tsai, Jung-sheng
龍潭農工	楊孔璋	蔡榮生
Kwansi VA	Linm Chiung-yao	Lin, Chen-ching
關西農校	林瓊瑤	林振慶
Tahu VA&I	Chang-Liao, Kuei-yan	Tsai, Yu-lin
大湖農工	張廖貴洋	蔡昀玲
Wufeng VA&I	Chan, Yao-tung	Lin, Fung-lung
霧峰農工	詹耀東	林豐隆
Huwei VA&I	Wu, Chiung-tai	Wuei, Hui-mei
虎尾農工	吳炯泰	魏慧美
Hsilo VA&I	Chiang, Pin	Lin, Chin-chien
西螺農工	江 濱	林清賽

Peikang VA&I	Chao, Chin-shuei	Chao, Chin-shuei
北港農工	趙錦水	趙錦水
Tungshih VA&I	Liao, Fu-jung	Huang, Chin-yi
東石農工	廖福榮	黃進益
Minghsiung H.S.	Su, Wan-neng	Wu, Cheng-hsin
民雄高中	蘇萬能	吳成信
Tsenwen VA&I	Yen, Tai-kuei	Liang, Mao-lung
曾文農工	嚴太煃	梁茂隆
Peimen VA&I	Tseng, Yuan-huang	Lee, Chan-jung
北門農工	曾元晃	李燦榮
Chishan VA&I	Yehn, Yuan-Huang	Yang, Tai-pin
旗山農工	葉源皇	楊太平
Kangshan VA&I	Ko, Yuan-fan	Wu, Kuang-puo
岡山農工	柯遠帆	吳光博
Chiatung VA	Wu, Wen-li	Jien, Shih-hsiung
佳冬農校	吳文立	簡石雄
Jenai VA	Ho, Wei-chin	Tsai, Shiu- shuang
仁愛農校	何維清	蔡秀霜
Neipu VA&I	Chuang, Pien-nan	Chung, Ju-jen
內埔農工	莊梗楠	鍾如仁

Appendix III

Data Collection Forms
蒐集資料之表格

III-1. Form A-4: 1989 Basic Data about Sample Graduates
樣本畢業生基本資料

III-2. Sample Cover Letter for Questionnaire
問卷啓事函

III-3. Q-2 (1989) Questionnaire for Sample V-A Graduates Who Responded to a Study in 1975.
回函民國64年研究之樣本農校畢業生問卷

III-4. Q-3 (1989) Questionnaire for Sample 1982 and 1984 Graduates from Six V-A Schools.
六所農校民國71及73年樣本畢業生問卷

III-5. Q-4 (1989) Questionnaire for Sample Technical Agriculture Graduates Who Responded to a Study in 1975.
回函民國64年研究之樣本農專畢業生問卷

III-6. Q-5 (1989) Questionnaire for Sample 1984 Technical Agriculture Graduates.
民國73年樣本農專畢業生問卷

表A－4(修訂)－1989

臺灣農業職業技術教育研究計劃
高農畢業抽樣學生資料

國立中興大學 合作主辦
美國密西根州立大學

學校名稱 _____ 畢業年月 _____

畢業生姓名	性別		國文平均成績	畢業總平均成績	畢業名次班次	科別	入學時家長職業	通訊地址	備註
	男	女							

III-2. Sample Cover Letter for Questionnaire
問卷啓事函

同學惠鑒：

本校茲再度與國立中興大學及美國密西根州立大學合作，舉辦本省農業職業及專科教育之研究計劃。

過去曾三次舉辦類似之調查工作，惟多年來各方均有甚大之變動，此次賡續性之調查研究，其結果對本省農業教育之改進及發展，將有重要之參考價值。

附寄調查表一份，希仍本以往愛護母校之精神，翔實填寫，並請於最短期間寄回母校爲盼。

耑此順頌

時祺

啓　　年　　月　　日

Ⅲ-3. *Q-2 (1989) Questionnaire for Sample V-A Graduates Who Responded to a Study in 1975.*

回函民國64年研究之樣本農校畢業生問卷

臺灣省農業職業學校畢業生現況調查表
(七十八年舉辦)

請把答案填入下列問題內，如係選擇題請將您認爲適當的答案號數填入每題後面的括弧內。

20-21

1. 出生_____年_____月 籍貫_____ 現在的住址_____縣(市) 22

以下各題有關您職業方面的 24

2. 您現在共有幾項職業？ ①一項 ②二項 ③兩項以上 ④仍在軍中服役 ⑤就學中 ⑥未就業 ⑦已退休……( )33

3. 您主要的職業是什麼？請將工作性質略加說明_____ 16-17

3.1.您的職稱是_____ 18-19

3.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )34

3.3.聘僱機關的名稱：_____

3.4.這項工作共作了多久？ ①不到1年 ②1-3年 ③3-5年 ④5-7年 ⑤7-9年 ⑥9年以上 ……( )35

3.5.這項工作是 ①全天上班 ②兼業性的……( )36

3.6.每星期中，大約要花多少時間從事這項工作？ ①10小時以內 ②10-20小時 ③21-30小時 ④31-40小時 ⑤40小時以上……( )37

3.7.您對於這項工作 ①十分滿意 ②滿意 ③認爲尚可 ④不太滿意 ⑤非常不滿意……( )38

4. 如您有第二項職業(務農除外)，請將該項工作的性質略加敘述_____ 53-54

4.1.這第二項工作的職稱是_____ 55-56

4.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )57

4.3.聘僱機關的名稱：_____

4.4.每星期中，大約要花多少時間從事這項工作？ ①10小時以內

②10-20小時 ③21-30小時 ④31-40小時 ⑤40小時以上……(　)60

5. 您在高農畢業後曾否從事經營農場工作？ ①否 ②是……(　)61

6. 如經營過，共作了多久？ ①不到1年 ②1-2年 ③3-4年 ④5年以上
……(　)62

7. 您現在經營農場 ①是全業的 ②是兼業的 ③已經不作了 ……(　)63

8. 如以前經過農場，現在不作了，中止的原因是什麼？_____
_____ 64

如您已中止農場經營工作，請直接答16題。

9. 每星期中，大約要花多少時間在管理農場的工作上？◎沒有 ①10小時以內 ②10-20小時 ③21-20小時 ④31-40小時 ⑤40小時以上 …(　)65

10. 您經營農場是 ①自耕場 ②半自耕農 ③佃農 ④管理父親或親戚的農場 ⑤管理他人或某一機構的農場 ⑥在父親或親戚的農場上作技術人員 ⑦在其他農場上作技術人員 ⑧其他_____ ……(　)66

11. 如係自耕農，您的田地如何獲得？ ①購置 ②繼承 ③結婚而得 ④購置兼繼承 ⑤購置兼由結婚 ⑥繼承兼由結婚 ⑦其他_____(　)67

12. 您的田地面積多大？

水田_____甲_____分
旱田_____甲_____分
其他_____甲_____分　68
(果園、茶園、林地等)
總計_____甲_____分

13. 您農場主要經營的種類是什麼？
作物方面_____ 70-75
家畜家禽方面_____ 20

14. 經營一個農場，您認爲主要的困難是什麼？_____
_____ 21-27

15. 您農事經營上的權屬(可作多項圈定)
15.1.自營的農場　(　)67
15.2.與別人從事共同經營　(　)68
15.3.農地轉租別人　(　)69
15.4.自行承租　(　)70
15.5.爲合作農場之一員　(　)71
15.6.爲農場的技術人員　(　)72
15.7.其他_____(　)73

16. 協助您解決農場問題以及有關資料的來源：

	從不	很少	有時	經常		
農會……	①	②	③	④	……(	)28
縣(市)政府農林科……	①	②	③	④	……(	)29
農林廳……	①	②	③	④	……(	)30
農業改良場或農業試驗所……	①	②	③	④	……(	)31
大學農學院或農業專科學校……	①	②	③	④	……(	)32
農業職業學校……	①	②	③	④	……(	)33
農委會……	①	②	③	④	……(	)34
糖業公司或其他機構的推廣人員……	①	②	③	④	……(	)35
其他農友……	①	②	③	④	……(	)36
無線電廣播……	①	②	③	④	……(	)37
電視……	①	②	③	④	……(	)38
報紙……	①	②	③	④	……(	)39
刊物雜誌……	①	②	③	④	……(	)40
其他……	①	②	③	④	……(	)42

17. 您去年現金收入大約是多少？(如係經營農場，請填入純收益)
全年新臺幣_____元 或每月新臺幣_____ 43

18. 自從回您答我們前次的問卷後，十四年來您最大變動是什麼？__ 44-45
_____

19. 如果農校辦理一個有關農場經營的講習課，每個月上課一兩次，您是否願意參加？ ①願意 ②不願意……( )74

19.1. 如果願意參加，請列出希望講習的科目_____
_____
_____ 75-79

⊙對台端之協助深表感謝，請將填就之調查表寄回原學校⊙

Ⅲ-4. Q-3 (1989) Questionnaire for Sample 1982 and 1984 Graduates from Six V-A Schools.

六所農校民國71及73年樣畢業生問卷

Q-3(1989)

台灣省農業職業學校七十一、七十三年畢業生現況調查

請把答案填入下列問題內，如係選擇題請將您認爲適當的答案號數填入每題後面的括弧內。

1. 出生_____年_____月 20-21
2. 籍貫：_____ 現在的住址：_____縣(市) 22-26
3. 當您在農校讀書時，家住在那裡？ ①市區 ②鄉村 ③城鄉混合區 ……( )23
4. 您在高農讀的是那一科？_____科
5. 您是否在大專院校讀過書？ ①否 ②是……( )27
   - 5.1.如曾經讀過，這所學校的名稱是_____ 28
   - 5.2.是否已在大專院校畢業？ ①否 ②是 ③仍在就學中 ……( )29
   - 5.3.您在大專院校讀的是那一系(科)？_____系(科) 30-31
   - 5.4.所接受的學位或文憑是_____ 32
6. 您現在共有幾項職業？ ①一項 ②兩項 ③兩項以上 ④仍在軍中服役 ⑤就學中 ⑥未就業 ……( )33
7. 請將您主要工作的內容略加敘述_____ _____ 16-17
   - 7.1.您的職稱是_____ 18-19
   - 7.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )34
   - 7.3.聘用機關的名稱：_____
   - 7.4.這項工作共作了多久？ ①不到1年 ②1-3年 ③3-5年 ④5-7年 ⑤7-9年 ⑥9年以上 ……( )35
   - 7.5.這項工作是： ①全天上班 ②兼業性的……( )36
   - 7.6.每星期中，大約要花多少時間從事這項工作？ ①10小時以內 ②10-20小時 ③21-30小時 ④31-40小時 ⑤40小時以上……( )37
8. 您在什麼時候決定了就業的方向？ ①進入農校以前 ②在農校讀書時

③在農校畢業以後 ④有大專院校讀書時 ⑤在大專畢業以後……(　)38

9. 什麼人對於您的決定有所影響？ ①有大專時本系(科)的主任或其他教授 ②農校校長 ③農校班導師 ④農校其他教師 ⑤中學教師 ⑥父母或親戚 ⑦朋友 ⑧自己 ⑨其他……(　)39

10. 您是基於那一種想法才從事這項工作的？ ①祇要有工作就好 ②賺錢 ③工作環境良好 ④有保障 ⑤這項工作重要 ⑥有機會升遷 ⑦服務他人 ⑧有興趣 ⑨其他 ……(　)40

11. 當您畢業後第一次就業是什麼職業？

機關名稱：---------- 41-42

您的職稱：---------- 43-44

12. 下列的那一位幫您找到第一次職業？ ①讀大專本系系(科)的主任或其他教授 ②農校校長 ③農校班導師 ④農校其他教師 ⑤中學教師 ⑥父母或親戚 ⑦朋友 ⑧通過就業考試 ⑨其他 ……(　)45

13. 您在農校所接受的教育是否有助於獲得第一項職業？ ①是 ②否 ……(　)46

請說明原因---------- 47

下列的問題並沒有所謂正確或錯誤的答案，請就您個人的看法在四種不同程度中表示意見。

14. 農校的課程太偏重於理論 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)25

15. 農校的實驗時間不夠 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)26

16. 農校的田間實習時間不夠 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)27

17. 所有農校學生均應來自農家 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)28

18. 農校應男女生兼收 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)29

19. 農校招收學生應限於對農業感興趣者 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意 ……(　)30

20. 農校應辦理農民講習班 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)31

21. 農校最應著重農業學科 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)32

22. 農校應採用農民實際問題以教導學生新的農業技術 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……(　)33

23. 農校教師應有時間到學生或農民的農場上指導他們 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……( )34

24. 您對目前的職業感到非常滿意 ①完全不同意 ②不完全同意 ③大致同意 ④完全同意……( )35

25. 您認爲農校還應該做的是些什麼事情？_____

_____

( )36-42

26. 您去年一年中現金收入共多少？(如係經營農場請填所得的純收益)

全年新臺幣_____元 或每月新臺幣_____元 43

27. 您現在用在經營農場時間是 ①全部時間 ②部份時間 ③沒有 …( )44

28. 您經營農場是 ①自耕農 ②半自耕農 ③佃農 ④管理父親或親戚的農場 ⑤管理其他私人或機關的農場 ⑥在父親或親戚的農場上作技術人員 ⑦在其他農場上作技術人員 ⑧其他 ……( )45

29. 如係自耕農，您的田地如何獲得？ ①購置 ②繼承 ③結婚而得 ④購置兼繼承 ⑤購置兼結婚 ⑥繼承兼結婚 ⑦其他情況(請說明)

_____( )46

30. 您的田地面積多大？

水田_____甲_____分

旱田_____甲_____分

其他_____甲_____分 47

(果園、桑園、林地等)

共計_____甲_____分 48

31. 每星期花在經營農場的時間有多少？ ①不到10小時 ②10-20小時 ③21-30小時

32. 您在農場經營上的權屬(可作多項圈定)

23.1.自營的農場 ( )67

23.2.與別人從事共同經營 ( )68

23.3.農地轉租別人 ( )69

23.4.自行承租 ( )70

23.5.爲合作農場之一員 ( )71

23.6.爲農場的技術人員 ( )72

23.7.其他：_____( )73

33. 您農場主要經營的種類是什麼？

作物方面：_____ 50-55

家畜家禽方面：_____ 56

34. 經營一個農場，您認爲主要的困難是什麼？_____

35. 協助您解決農場問題以及有關資料的來源：

	從不	很少	有時	經常		
農會	①	②	③	④	……(	)64
縣(市)政府農林科	①	②	③	④	……(	)65
農林廳	①	②	③	④	……(	)66
農業改良場或農業試驗所	①	②	③	④	……(	)67
大學農學院或農業專科學校	①	②	③	④	……(	)68
農業職業學校	①	②	③	④	……(	)69
農委會	①	②	③	④	……(	)70
糖業公司或其他機構的推廣人員	①	②	③	④	……(	)71
其他農友	①	②	③	④	……(	)72
無線電廣播	①	②	③	④	……(	)73
電視	①	②	③	④	……(	)74
報紙	①	②	③	④	……(	)75
刊物雜誌	①	②	③	④	……(	)76
其他	①	②	③	④	……(	)77

36. 如果農校辦理一個有關農場經營的講習課，每個月上課一兩次，您是否願意參加？ ①願意 ②不願意……( )78

36.1. 如果願意參加，請列出希望講習的科目_____

_____ 79

⊙對台端之協助深表感謝，請將填就之調查表寄回原學校⊙

Ⅲ-5. *Q-4 (1989) Questionnaire for Sample Technical Agriculture Graduates Who Responded to a Study in 1975.*

回函民國64年研究之樣本農專畢業生問卷

Q-4(1989)

屏東暨嘉義農專畢業生調查表
（七十八年舉辦）

請把答案填入列問題內，如係選擇題請將您認爲適當的答案號數填入每題後面的括弧內。

1. 出生_____年_____月 20-21
2. 籍貫：_____ 現在的住址：_____縣(市) 22-26
3. 您現在共有幾項職業？ ①一項 ②兩項 ③兩項以上 ④仍在軍中服役 ⑤就學中 ⑥未就業 ……( )33
4. 請將您主要工作的內容略加敘述_____ _____ 16-17
   4.1.您的職稱是_____ 18-19
   4.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )34
   4.3.聘用機關的名稱：_____
   4.4.這項工作共作了多久？ ①不到1年 ②1-3年 ③3-5年 ④5-7年 ⑤7-9年 ⑥9年以上 ……( )35
   4.5.這項工作是： ①全天上班 ②兼業性的……( )36
   4.6.每星期中，大約要花多少時間從事這項工作？ ①10小時以內 ②10-20小時 ③21-30小時 ④31-40小時 ⑤40小時以上……( )37
   4.7.您對於這項工作 ①十分滿意 ②滿意 ③認爲尚可 ④不太滿意 ⑤非常不滿意……( )38
5. 如果現在有一項以上之職業，請將第二項之性質略加說明_____ _____ 53-54
   5.1.您的職稱是_____ 55-56
   5.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )57
   5.3.機關的名稱：_____

5.4.每週大約花多少時間從事這項工作：①不到10小時 ②10-20小時
③21-30小時 ④31-40小時 ⑤40小時以上……(　)60

6. 您在高農畢業後曾否從事經營農場工作？①否 ②是……(　)61

6.1.如經營過，共作 ①不到1年 ②1-2年 ③3年以上……(　)62

6.2.您現在經營農場 ①全業的 ②兼業的 ③已經不作了 ……(　)63

7. 您經營農場是 ①自耕場 ②半自耕農 ③佃農 ④管理父親或親戚的農場
⑤管理他人或某一機構的農場 ⑥在父親或親戚的農場上作技術人員
⑦在其他農場上作技術人員 ⑧其他_____ ……(　)70

8. 如係自耕農，您的田地如何獲得？①購置 ②繼承 ③結婚而得
④購置兼繼承 ⑤購置兼由結婚 ⑥繼承兼由結婚 ⑦其他_____(　)71

9. 您的田地面積多大？

水田_____甲_____分
旱田_____甲_____分
其他_____甲_____分
(果園、茶園、林地等)　72-73
總計_____甲_____分

10. 每星期中，大約要花多少時間在管理農場的工作上？◎沒有 ①10小時以內
②10-20小時 ③21-20小時 ④31-40小時 ⑤40小時以上……(　)74

11. 您農事經營上的權屬(可作多項圈定)

11.1.自營的農場　(　)75
11.2.與別人從事共同經營　(　)76
11.3.農地轉租別人　(　)77
11.4.自行承租　(　)78
11.5.爲合作農場之一員　(　)79
11.6.爲農場的技術人員　(　)58
11.7.其他_____(　)59

12. 您農場主要經營的種類是什麼？
作物方面_____　20-26
家畜家禽方面_____　27-33

13. 經營一個農場，您認爲主要的困難是什麼？_____
_____

14. 協助您解決農場問題以及有關資料的來源：

	從不	很少	有時	經常	
農會……	①	②	③	④	……(　)34
縣(市)政府農林科……	①	②	③	④	……(　)35
農林廳……	①	②	③	④	……(　)36

農業改良場或農業試驗所…… ① ② ③ ④ ……( )37
大學農學院或農業專科學校…… ① ② ③ ④ ……( )38
農業職業學校…… ① ② ③ ④ ……( )39
農委會…… ① ② ③ ④ ……( )40
糖業公司或其他機構的推廣人員…… ① ② ③ ④ ……( )41
其他農友…… ① ② ③ ④ ……( )42
無線電廣播…… ① ② ③ ④ ……( )43
電視…… ① ② ③ ④ ……( )44
報紙…… ① ② ③ ④ ……( )45
刊物雜誌…… ① ② ③ ④ ……( )46
其他…… ① ② ③ ④ ……( )47

15. 如果農校辦理一個有關農場經營的講習課，每個月上課一兩次，您是否願意參加？ ①願意 ②不願意……( )74

15.1. 如果願意參加，請列出希望講習的科目_____
_____
_____ 75-79

⊙對台端之協助深表感謝，請將填就之調查表寄回原學校⊙

Ⅲ-6. Q-5 (1989) Questionnaire for Sample 1984 Technical Agriculture Graduates.

民國73年樣本農專畢業生問卷

Q-5(1989)

屏東暨嘉義農專七十三畢業生調查表
(七十八年舉辦)

請把答案填入列問題內，如係選擇題請將您認爲適當的答案號數填入每題後面的括弧內。

1. 出生_____年_____月 20-21
2. 籍貫：_____ 現在的住址：_____縣(市) 22-26
3. 當您在農校讀書時，家住在那裡？ ①市區 ②鄉村 ③城鄉混合區 ……( )23
4. 您高中讀的是： ①高級中學 ②高級農校 ③其他高級中等學校 ④初中畢業後直接進入五年專科……( )25
5. 您在高農讀的是那一科？_____科
6. 農專畢業後，是否曾進入大學(學院)修讀？ ①是 ②否……( )27
   如未進入請接第8答題
   6.1.如曾經讀過，這所學校是_____ 28
   6.2.是否在該校畢業？ ①否 ②是 ③仍在就學中 ……( )29
   6.3.您在大學讀書的是_____系 30-31
   6.4.到現在您所獲得的最高學位是_____士 32
7. 您現在共有幾項職業？ ①一項 ②兩項 ③兩項以上 ④仍在軍中服役 ⑤就學中 ⑥未就業 ……( )33
8. 請將您主要工作的內容略加敘述_____
   _____ 16-17
   8.1.您的職稱是_____ 18-19
   8.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )34
   8.3.聘用機關的名稱：_____
   8.4.這項工作共作了多久？ ①不到1年 ②1-3年 ③3-5年 ④5-7年 ⑤7-9年 ⑥9年以上 ……( )35
   8.5.這項工作是： ①全天上班 ②兼業性的……( )36

8.6.每星期中，大約要花多少時間從事這項工作？ ①10小時以內 ②10-20小時 ③21-30小時 ④31-40小時 ⑤40小時以上……( )37

8.7.您對於這項工作 ①十分滿意 ②滿意 ③認爲尚可 ④不太滿意 ⑤非常不滿意……( )38

8.8.那些人士對於您之擇業有所影響？ ①在大專時本系(科)的主任或其他教授 ②農校校長 ③農校班導師 ④農校其他教師 ⑤中學教師 ⑥父母或親戚 ⑦朋友 ⑧自己 ⑨其他……( )39

8.9.您是基於那一種想法才從事這項工作的？ ①祇要有工作就好 ②賺錢 ③工作環境良好 ④有保障 ⑤這項工作重要 ⑥有機會升遷 ⑦服務他人 ⑧有興趣 ⑨其他……( )40

9. 如您現在有一項以上之職業，請將第二項之性質略加說明_____ _____ 53-54

9.1.您的職稱是_____ 55-56

9.2.這項工作是 ①自營的 ②屬於私人機構 ③屬於政府機關 ④受聘於他人……( )57

9.3.機關的名稱：_____

9.4.每週大約花多少時間從事這項工作： ①不到10小時 ②10-20小時 ③21-30小時 ④31-40小時 ⑤40小時以上……( )60

10. 您在高農畢業後曾否從事經營農場工作？ ①否 ②是……( )61

10.1.如曾經營，共作 ①不到1年 ②1-2年 ③3年以上 ……( )62

10.2.您現在經營農場是 ①全業的 ②兼業的 ③已經不作了……( )63

11. 當您畢業後第一次就業：

僱主機關：_____ 41-42

職　　稱：_____ 43-44

11.1. 下列的那一位幫您找到第一次職業？ ①讀大專本系系(科)的主任或其他教授 ②農校校長 ③農校班導師 ④農校其他教師 ⑤中學教師 ⑥父母或親戚 ⑦朋友 ⑧通過就業考試 ⑨其他 ……( )45

11.2. 您在農校所接受的教育是否有助於獲得第一項職業？ ①是 ②否 ……( )46

11.3. 請說明原因_____ 47

11.4. 第一次就業共作了多久？ ①不到6個月 ②6個月～1年 ③1～2年 ④2～3年 ⑤3年以上……( )48

12. 請依序列出現就之職業最有幫助之三門課：第一：_____

第二：_____ 第三：_____ 49-50

12.1. 請說明第一重要科目對您目前有怎樣的幫助？----------
---------- 51

對加強臺灣的農業有關教育與農業關連性的問題請表示您的意見：

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13. 假如您今年秋季再進入農專，您將 ①仍修讀原科 ②擬改修_____科
③您不再修習農科……( )52

14. 農專是否應增設新的科別？ ①不需要 ②可增設_____科……( )64

15. 依您現在的職位言，接受那一種訓練的人最適合： ①不超過高中程度
②二年制專科 ③三年制專科 ④大學 ⑤研究所 ⑥其他(請說明)
----------……( )65

16. 假如有人充任您現在職位，什麼類別的教育最合適？ ①農業 ②工業
③商業 ④法律 ⑤文學 ⑥其他(請說明)_____……( )66

17. 假如有人充任您現在職位，您是否認爲需要學習更多的課程以使
17.1. 有助於現在職務 ①是 ②否……( )67
答案如爲①，請列出最有用之學科名稱---------- 68
17.2. 有助於另謀新職？ ①是 ②否……( )69

⊙對台端之協助深表感謝，請將填就之調查表寄回原學校⊙